



South Carolina
Forestry Commission

ANNUAL REPORT

FY2020-21

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SOUTH CAROLINA FORESTRY COMMISSION

Commissioners

Dr. Walter McPhail, Mauldin, Chairman
H. Stro Morrison, III, Estill, Vice-Chairman
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Amy L. McFadden, Georgetown County
Eric Smith, Summerville
Jesse Neville, Walhalla
Josh Sandt, Murrell's Inlet
W. McLeod "Mac" Rhodes, Charleston
Dr. Keith Belli, representative for Dr. James P. Clements, Clemson University

Administration

Scott L. Phillips, State Forester
Tom Patton, Deputy State Forester
Cathy Nordeen, Director of Administration

Mission

Protect, promote and enhance South Carolina's forests for the benefit of all.

Vision

Healthy forests, resilient communities, impeccable service

Values

As employees of the South Carolina Forestry Commission, we value:

- Safety
We operate every day with a personal commitment to safety.
- Integrity
We earn a high level of trust and respect.
- Community
We view our employees, partners, and stakeholders as a valued community.
- Service
We take pride in helping others.
- Commitment
We stay strong and press forward to get the job done.

The South Carolina Forestry Commission prohibits discrimination in all programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. The Forestry Commission is an equal opportunity provider and employer. To file a complaint of discrimination, contact the Human Resources Director, SC Forestry Commission, P.O. Box 21707, Columbia, SC 29221, or call (803) 896-8800.

FOREST PROTECTION

This section encompasses the Fire Management, Dispatch & Air Operations, Law Enforcement and Equipment programs.

Fire Management

The South Carolina Forestry Commission (SCFC) is responsible for protecting 13,657,033 acres of forestland in South Carolina from wildfire. This total area protected is based on the 2001 Forest Inventory Analysis data with 10% added to cover adjacent non-forest land. This figure includes 101,320 acres of federal land protected under special contract, which includes such lands as the Carolina Sandhills National Wildlife Refuge and the Corps of Engineers land around such lakes as Lake Thurmond, Hartwell, and Russell. Also included is forestland protected by Mutual Aid, which is approximately 824,801 acres of additional federal land that includes lands such as the Francis Marion and Sumter National Forests, National Park lands, and lands owned by US Fish and Wildlife Service.

Wildfire Summary

Agency firefighters recorded 1,077 wildfires that burned 7,744.3 acres of forestland and grassland during the fiscal year.

In FY2020-21 wildfires destroyed 12 homes and damaged 6 others. In addition, 20 other buildings were destroyed and 11 buildings were damaged. Agency firefighters saved 391 structures that were directly threatened by wildfires.

Fire Protection Cooperatives

The Forestry Commission has cooperative arrangements with 12 fire and emergency management entities. Activities for each cooperative agreement during FY2020-21 are as follows:

SOUTHEASTERN STATES FOREST FIRE COMPACT COMMISSION

Formed in 1954, the Compact allows member states to provide and receive mutual aid in fighting wildland fires. Member states of the Southeastern States Forest Fire Compact include: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia. During this fiscal year, SCFC resources were mobilized to assist Texas under the Compact. No resources were dispatched in FY 21 under the Compact.

SC EMERGENCY MANAGEMENT DIVISION

SCFC personnel, including incident management teams, participated in several emergency response training sessions throughout the year. Members of the IMT assisted the SC Department of Health and Human Services in the operation of a Statewide 3 month Covid Vaccination clinic in response to the Covid-19 pandemic.

SC ARMY NATIONAL GUARD

Under an agreement with the SC National Guard (SCNG), helicopter firefighting support is available when requested by SCFC. Requests from SCFC are channeled through EMD and the Governor's Office to activate the Guard. The Guard's primary firefighting mission is providing helibucket service to SCFC Incident Commanders using SCFC's 780-gallon and 2,000 gallon Bambi buckets. Guard helicopters are also available to transport firefighters into rough or inaccessible terrain. Joint training and coordination meetings between the SCNG and the SCFC are held annually to ensure mission readiness. In June of 2021, a three day training event was held at the Piedmont Forestry Center with SC Army National Guard Blackhawk units to cross train personnel from both agencies on the use and direction of aerial firefighting resources. In the spring of 2021, 6 Bambi Buckets owned by the Forestry

Commission were transported to the manufacturer for repairs and inspection to ensure readiness for wildfire use.

VOLUNTEER FIRE ASSISTANCE PROGRAM

Pass-through funds from the National Fire Plan, Volunteer Fire Assistance funds through the USDA Forest Service were distributed as follows:

National Fire Plan grant funds are for firefighting needs: 87 Fire Departments requested \$324,359 worth of firefighting equipment of which 666 fire departments were funded for \$250,438.

FEDERAL EXCESS PERSONAL PROPERTY PROGRAM (FEPP) AND THE FIREFIGHTERS PROGRAM (FFP)

The amount of equipment available for screening is limited but with the SCFC enrolled in both programs, we continue to screen items that fire departments and SCFC personnel have requested. The total value of inventoried federal excess property (including both FEPP and FFP) now stands at \$24,572,588 for 751 items, most of which are assigned to Volunteer Fire Departments. During the fiscal year there were 4 FEPP Auctions/GSA Sales. A total of 140 items were sold for a purchased value of \$80,673. In an effort to improve the program and bring all departments into compliance, SCFC field personnel and the FEPP program manager encouraged fire departments to turn in any equipment that was not being properly maintained or actively in operation.

NATIONAL WEATHER SERVICE

NWS provides daily fire weather forecasts and atmospheric dispersion information. During the year, SCFC and NWS work to improve content of daily weather forecasts. The SCFC did not request any spot weather forecasts this fiscal year for wildfires, but did participate in coordination meetings with the NWS.

USDA FOREST SERVICE

A mutual aid agreement between the US Forest Service (USFS) and SCFC allows both parties to provide initial attack firefighting within one-quarter mile of National Forest boundaries. This 5 year agreement was renewed in November, 2018. SCFC provided initial attack on a number of fires on the Francis Marion and Sumter National Forests during the fire season, and SCFC investigators assisted with wildfire investigation.

DOD CORPS OF ENGINEERS

Beginning in 1997, SCFC has provided all fire suppression services on 55,320 acres of Corps of Engineers land. Under the terms of the agreement, actual fire suppression costs are reimbursed to the SCFC. This year the SCFC responded to one fire on lands owned by the Corps of Engineers.

USDI FISH AND WILDLIFE SERVICE

Under the terms of a 1992 land acquisition agreement, SCFC provides initial attack fire suppression on the 46,000 acre Carolina Sandhills National Wildlife Refuge. The agreement terminates in 2042. SCFC maintains mutual aid firefighting agreements with the following National Wildlife Refuges: Ace Basin, Cape Romain, Savannah, Pinckney Island, and Santee.

USDI NATIONAL PARK SERVICE

Agreements were maintained to provide initial attack wildfire suppression on National Park Service lands; no reportable activity occurred during this fiscal year.

WILDLAND FIRE PROTECTION PARTNERSHIP

Organized in 1991, the Partnership seeks solutions to wildfire management problems in the wildland-urban interface. Membership includes the SCFC, USFS, SC Firemen's Association, Department of Health and Environmental Control, SC Emergency Management Division (SCEMD), SC Fire Marshal, SC Fire Academy, and SC Forestry Association (ex officio).

PRESCRIBED FIRE COUNCIL

Organized in 2003, the goal of the Prescribed Fire Council is to increase the amount of prescribed burning in SC. The Council is working on increasing the capacity to get burning done in SC and in educating the public on the benefits of burning. The SCFC is a charter member and active participant in the council, and provided support for the Council, as well as presentations, for the annual meeting held virtually in September, 2020.

HOMELAND SECURITY

Through a grant from the Department of Homeland Security (DHS) and the South Carolina Law Enforcement Division (SLED), the SCFC continued to train incident management teams (IMT) to improve the effectiveness of response to large incidents. Forestry Commission IMTs were staffed, training was conducted for individual team members and teams, and team members participated in training assignments to complete task books to validate their training. Grant funds continued to support an Incident Management Team (IMT) Coordinator position to facilitate the development of nationally-qualified IMTs from within the Forestry Commission and to ensure consistency among three multi-disciplinary (non-SCFC) Type 3 IMTs located in 3 SLED regions of the State. The IMT assisted the SC Department of Health and Human Services in the operation of a 3 month Covid vaccination clinic in response to the Covid-19 pandemic. IMT members also worked with Clemson Livestock & Poultry Health staff in support of a national exercise to be held in late 2021, and developed plans for the Southern Blue Ridge TREX that was scheduled for the fall of 2021.

Fire Weather

WEATHER STATIONS

The SCFC, USFS, USDI National Park Service, Department of Defense (Ft. Jackson), and USDI Fish and Wildlife Service share a network of 22 Automated Weather Stations across the state. Data from these stations is used in daily calculations for the National Fire Danger Rating System. Weather readings from these stations are available 24 hours a day for wildfire and prescribed fire management purposes. Annual maintenance was completed on SCFC owned weather stations in October and November of 2020.

Inches of precipitation, FY2019-20FY2020-2021 (GHCN-D 5km data)

Month	Precipitation (inches)	Departure from normal
July	7.61	2.26
August	3.74	-0.91
September	4.50	0.59
October	0.94	-2.19
November	3.48	0.72
December	3.49	-0.21
January, 2021	5.32	1.83
February	6.39	3.00
March	3.43	-0.14
April	0.80	-2.03
May	2.64	-0.85
June	3.71	-1.26
Total	46.05	0.81

Source: National Climate Data Center

Inches of precipitation, last five years (GHCN-D 5km data)

Fiscal year	Precipitation (inches)	Departure from normal**
2016-17	48.65	1.09
2017-18	45.44	-1.98
2018-19	55.42	7.78
2019-20	57.02	9.08
2020-2021	46.05	0.81
Source: National Climate Data Center		
**Statewide normal, based on previous 30 years		

READINESS PLAN

The daily readiness level of Forestry Commission firefighters is based on fire danger data, available number of firefighters, and status of firefighting equipment. Average readiness levels for each of the three regions for FY2019-2020 are as follows:

Readiness levels, by region			
Readiness level/Region	Coastal	Pee Dee	Piedmont
Readiness 1 (no wildfire danger)	0 days	0 days	0 days
Readiness 2 (no wildfire danger)	235 days	151 days	318 days
Readiness 3 (no wildfire danger)	156 days	245 days	64 days
Readiness 4 (no wildfire danger)	3days	7 days	5 days
Readiness 5 (no wildfire danger)	0 days	0 days	0 days

BURNING BANS AND RED FLAG FIRE ALERTS

Three Red Flag Fire Alerts were issued in FY 21. On March 15, 2021, a Red Flag was issued for Georgetown and Horry Counties due to critically low relative humidity values and high wind gusts. The Red Flag was lifted on March 16 after conditions improved. Another Red Flag was issued for the entire state from April 20-23, 2021 due to forecasted low relative humidity and higher than normal wind gusts, and was lifted as relative humidity increased and the chance of significant rainfall was predicted. One additional Red Flag Fire Alert was in place from April 20-May 2, 2021 due to critically low relative humidity values and high winds. This alert was lifted as heavy rainfall approached the state. No State Forester's Burning Bans were issued during this fiscal year.

Dispatch and Air Operations

DISPATCH

Dispatch operations were moved under the purview of the Protection Section (and out from under the Technology Division) this fiscal year. Forestry Commission dispatch is by closest available resource, regardless of political or administrative boundaries. Dispatching was handled by regional dispatch centers located in Walterboro, Florence, and Newberry.

AVIATION

During the year, SCFC pilots flew 11 different Federal Excess Property aircraft for a total of 276 missions for 673 hours. Reduced aviation budgets have curtailed aerial detection flights and have limited flights to moderate to high fire danger days when aircraft are needed for wildfire suppression, evacuation, or other emergency response assistance. This year, SCFC pilots flew a total of 673 hours (Coastal- 127 hours, Pee Dee-328 hours, Piedmont- 218 hours).

Prescribed Fire

CERTIFIED PRESCRIBED FIRE MANAGER PROGRAM

Four Certified Prescribed Fire Manager Programs were conducted during the year with 65 participants. Due to public safety concerns related to COVID-19, class sizes were limited this year. This course focuses on planning prescribed burns to comply with mandated air quality standards.

Prescribed burning for forestry, wildlife and agriculture, FY2019-20								
	Forest understory		Forestry site prep		Wildlife		Agriculture	
Region	Number	Acres	Number	Acres	Number	Acres	Number	Acres
Coastal	1,479	122,096	918	7,443	1,209	90,919	858	14,772
Pee Dee	867	40,356	577	3,680	847	44,288	887	14,009
Piedmont	1,171	87,843	1,175	4,245	330	13,910		
State Total	3,517	250,296	2,670	15,368	2,386	149,117	1,745	28,781
Total forestry, wildlife & agriculture burns: 10,318 for 443,562 acres								

Fire Prevention Information

WILDLAND-URBAN INTERFACE (WUI)

Work continued on assessing wildland-urban interface communities' risks to wildfire throughout the state. Primary areas of concern involve communities in Horry, Georgetown and Charleston Counties with increased interest in Oconee, Spartanburg, York and Chester Counties. There are a few large-scale Community Wildfire Protection Plans (CWPP) that have been initiated. Preliminary meetings and discussions have been conducted for potential CWPP creation for the Indian Creek area as well as the

Paris Mountain area. These “landscape” plans will involve multiple counties, and municipalities, and cooperation between multiple agencies. The goal of the Firewise program is to increase the awareness of homeowners to their responsibility in helping to reduce the risk of their homes from burning in a wildland fire. This is accomplished by conducting Firewise workshops such as ‘*How to Have a Firewise Home.*’ This year, 8 Firewise presentations, community and homeowner workshops with 100 in attendance due to social distancing guidelines. . Presentations included information about Firewise and the Ready, Set, Go! Program. Efforts have primarily been concentrated in Oconee County, Charleston County and in Horry/Georgetown Counties where interest has been greatest. The Firewise mobile exhibit (and the Firewise Table Top exhibit) was not used this year during the COVID-19 pandemic. Prior to the pandemic, it was reserved for 4 different events, however those were canceled. Fuels mitigation plans, workdays and assessments were conducted throughout the state. The SCFC has conducted a total of 1,405 community assessments to date with 1,350 of those rating at moderate to extreme in regards to wildfire risk. 28 new assessments of communities were completed across the state. There continue to be discussions and progress in finalizing large scale Community Wildfire Protections Plans for Charleston and Berkeley counties. Oconee county and the city of Seneca are also showing interest in the CWPP as well. To date 238 Community Wildfire Protection Plans have been written in which 785 communities have benefited.

Cooperative Firewise efforts are also occurring within communities around the Sumter and Francis Marion National Forests with Forest Service personnel. Work continued on Community Wildfire Protection Plans for communities around USFS land in Berkeley, Charleston, Newberry, Union, Jasper and Oconee Counties in cooperation with USFS and US Fish and Wildlife personnel. The Nature Conservancy has also participated in CWPP development.

National Fire Plan grant funds were awarded to 33 communities in the amount of \$144,395.99 for various projects including installation of a leaf disposal site, underbrushing of undeveloped lots and common areas such as entrance roads, and assistance with community chipping days to reduce the fuel buildups within their communities. Additional funds were used for fuels reduction and mitigation projects involving prescribed burning, underbrushing and fuelbreak installation for a total of 1,034 acres for \$72,517.26. Again many of these planned projects for communities for landowner mitigation projects were not able to be completed due to the pandemic and social distancing guidelines.

WILDFIRE PREVENTION

A statewide wildfire prevention awareness effort was made across the state prior to the spring 2021 wildfire season to promote safe debris burning; escaped debris burns are the number one cause of wildfires in the state. Most of our prevention efforts, especially in the spring, were virtual. Our focus was to get our message out on Facebook and other social media platforms, especially during the burning ban that was issued due to the pandemic. Also, these types of wildfires are commonly found near communities putting them at risk (i.e. wildland urban interface). In cooperation with local fire departments, SCFC field personnel throughout the state distributed "Think Before You Burn" (TBYB) promotional materials to businesses and public buildings. The primary field personnel involved were agency sector Fire Management Officers responding to debris burns during the burning ban. The distribution of materials included TBYB brochures, various other items, i.e. cups, koozies, slap bracelets, pencils and magnets with the county 1-800 burn numbers. Burning notification magnets were placed on the store counters for customers to pick up so they would have the appropriate county outdoor burning notification phone number handy. Some phone interviews were conducted with local media to increase public awareness.

Fires by cause, FY2020-21				
Cause	Fires	Acres Burned	Average Acres per Fire	Percent of Total Fires FY2019-20
LIGHTNING	21	289.3	2.36	1.95%
CAMPFIRE	11	26	2.36	1.02%
SMOKING	7	26.1	3.72	0.65%
DEBRIS BURNING	633	4046.8	6.39	58.88%
INCENDIARY	139	1758.0	12.9	12.93%
EQUIPMENT USE	85	803.4	9.45	7.90%
RAILROAD	16	57.7	3.60	1.48%
CHILDREN	22	69.2	3.14	2.04%
MISCELLANEOUS	78	557.7	7.15	7.25%
FIREWORKS	5	12.0	2.40	0.46%
POWER LINE	32	62.3	1.94	2.97%
STRUCTURE	23	31.3	1.20	2.41%
Totals	1,075	7,739.8	7.2	100.00%

Five-year summary: all fires FY2020-21					
Fiscal Year	Acres Protected	# Fires	Acres Burned	Avg. Acres/Fire	% Area Burned
	13,657,033				
2016-17	13,657,033	2,062	25,709.5	12.5	0.19%
2017-18	13,657,033	1,616	10,363.3	6.4	0.08%
2018-19	13,657,033	995	4,836.8	4.9	0.04%
2019-20	13,657,033	1,089	6,231.5	5.7	0.05%
2020-2021	13,657,033	1,075	7,739.8	7.2	0.05%
Five Year Averages		1,367	10,976.1	7.3	0.08%

Total fires by cause, by county - FY2020-21																										
	LIGHTNING		CAMPFIRE		SMOKING		DEBRIS BURNING		INCENDIARY		EQUIPMENT		RAILROAD		CHILDREN		MISC		FIREWORKS		POWER LINE		STRUCTURE		Total	Total
COUNTY	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres
ABBEVILLE	1	0.1			8	15.6	3	4.6			1	0.3			2	7.7									15	28.3
AIKEN	1	0.1	3	6	51	278.8	18	243.4	1	1	11	94	2	3	1	15	1	2			2	0.8	6	4.1	97	648.2
ALLENDALE					4	5.5	1	1			1	10					1	3							7	19.5
ANDERSON	2	3.5			8	15.6					1	1.5			1	10									12	30.6
BAMBERG					8	15	1	20			1	11	1	2											11	48
BARNWELL					9	210.7	2	72.5					2	3.5			2	9					1	10	16	305.7
BEAUFORT					12	49.4					1	0.5			1	1									14	50.9
BERKELEY			1	0.5	31	730.1	4	19.5	2	6	14	342.2	1	40	1	10	2	3.5	2	1.5			1	2	59	1155.3
CALHOUN					7	22.8					1	0.5	1	5									1	2	10	30.3
CHARLESTON			2	9	3	47					1	0.1													6	56.1
CHEROKEE	1	1.5			7	14					4	3.3			1	0.2									13	19
CHESTER					2	61.5	1	2							1	2.5			2	2.1					6	68.1
CHESTERFIELD	1	10			23	107.9	3	7			7	69.5			2	4							1	4	37	202.4
CLARENDON	1	3	1	2.5	24	36.6	1	0.1			5	12			1	3	2	2.2	2	6.5					37	65.9
COLLETON			1	1.5	31	122.1	3	1.2			4	64	3	1.7					1	1			1	0.5	44	192
DARLINGTON	1	1.6			16	72.7	6	95			3	28.1			3	37							2	0.7	31	235.1
DILLON					6	15.3							1	0.2	5	37.3	1	2	1	2					14	56.8
DORCHESTER	1	3.5			13	36.2	1	0.1			1	1													16	40.8
EDGEFIELD					5	12.1	1	52																	6	64.1
FAIRFIELD					3	3.2									2	2.5	1	0.3							6	6
FLORENCE					24	51.4	3	3.4	1	3	6	30			3	23.5									37	111.3
GEORGETOWN			1	0.5	38	587.3	4	41			10	28.1	1	15	1	0.1	1	1.5	1	20	2	22.3			59	715.8
GREENVILLE			1	0.2	8	23.8					1	1			1	0.5							1	0.2	12	25.7
GREENWOOD					3	20.6					2	62			4	23.6			3	3.2			1	1	13	110.4
HAMPTON					17	80.8	1	5			3	34	2	2.1			2	4					1	0.1	26	126
HORRY			3	1.1	17	72.9	3	8.5			6	4			1	1							1	0.2	31	87.7
JASPER					26	207.7					2	60													28	267.7
KERSHAW			1	5	20	59.5					1	12			8	19.2	3	3.5					2	1.2	35	100.4
LANCASTER			1	0.2	3	4.1					1	0.5	1	2											6	6.8
LAURENS					5	42.5							3	10.3			2	11			1	2	1	1	12	66.8
LEE					17	129.8	2	4			2	4.5			3	25.6	1	0.5					2	1.1	27	165.5
LEXINGTON	1	2.2	4	16.7	14	48.5	1	0.3					1	3.5	4	5.6			2	16.2					27	93
MARION					5	10.5	2	5			7	398.5			2	2.5									16	416.5
MARLBORO			1	20	10	46.7	5	100.7							6	37.1	1	4							23	208.5
MCCORMICK			1	1	3	98									1	9.6	1	0.3							6	108.9
NEWBERRY					2	3.1									1	2	2	1.5							5	6.6
OONEE	1	0.5			4	10.5					3	6.2			4	151.2			1	0.2			1	2.5	14	171.1
ORANGEBURG			1	5	36	174.3	13	70.5			2	46			2	8	1	0.1					2	0.6	57	304.5
PICKENS					11	52.1					1	3			3	2.2							1	0.1	16	57.4
RICHLAND					7	102.8					2	2.6			2	76									11	181.4
SALUDA					6	11.5					1	5			1	2.5	2	2.3							10	21.3
SPARTANBURG					3	7.5	1	0.1							2	10.2	2	0.6							8	18.4
SUMTER					23	57.9					5	40.5			2	11	2	0.8	1	5	2	1			35	116.2
UNION					3	6	1	0.5	1	2					1	0.5									6	9
WILLIAMSBURG					55	260.9	4	46			27	347.1	2	201	2	2.1	1	0.2							91	857.3
YORK					2	4					1	35			3	13.5	1	10							7	62.5
State Total	11	26	22	69.2	633	4046.8	85	803.4	5	12	139	1758	21	289.3	78	557.7	32	62.3	16	57.7	7	26.1	26	31.3	1075	7739.8

Total Burning Notifications by County - FY2020-21			
County	Acres protected	Smoke mgt. notifications	Other notifications
Abbeville County	248,551	101	2,719
Aiken County	524,743	372	21,701
Allendale County	199,005	256	745
Anderson County	216,023	107	15,639
Bamberg County	202,862	215	1,661
Barnwell County	266,959	178	3,102
Beaufort County	130,448	156	8,547
Berkeley County	595,291	381	17,134
Calhoun County	151,294	160	3,707
Charleston County	318,526	194	7,455
Cherokee County	168,077	39	4,086
Chester County	315,565	88	2,880
Chesterfield County	416,239	305	5,895
Clarendon County	238,952	305	5,527
Colleton County	560,896	521	10,492
Darlington County	176,333	166	8,467
Dillon County	163,935	83	2,357
Dorchester County	272,524	178	10,363
Edgefield County	279,433	186	3,052
Fairfield County	408,433	164	2,490
Florence County	308,707	195	9,989
Georgetown County	400,136	307	9,372
Greenville County	296,082	100	14,965
Greenwood County	205,593	65	3,930
Hampton County	303,663	390	2,380
Horry County	493,012	244	20,881
Jasper County	341,036	399	2,846
Kershaw County	376,376	156	14,331
Lancaster County	291,845	191	4,819
Laurens County	337,499	77	5,023
Lee County	121,735	169	1,588
Lexington County	256,939	219	30,474
Marion County	226,896	69	5,497
Marlboro County	226,676	59	3,271
McCormick County	223,394	95	1,081
Newberry County	334,566	120	3,555
Oconee County	292,590	85	13,445
Orangeburg County	446,887	503	12,724
Pickens County	236,029	49	13,392
Richland County	352,904	118	7,723
Saluda County	196,376	187	1,912
Spartanburg County	286,496	92	10,134
Sumter County	268,338	161	11,121
Union County	277,640	40	465
Williamsburg County	407,761	548	6,898
York County	293,768	102	12,802
Total	13,657,033	8,895	362,637
Total Smoke Mgt. & Other Notifications			371,532

Equipment

ACT 273 Budget					
Number	Item	Per Unit	Extended	Capital Reserve Fund	TOTAL
1	Western Star Truck Tractor	\$117,219.00	\$117,219.00	+	\$1,284,576.00
10	Western Star Transport	\$115,340.00	\$1,153,400.00		
10	Truck Bodies	\$28,325.00	\$283,250.00		
1	F-450 Service Truck	\$64,073.00	\$64,073.00		
9	Fire Plows	\$20,392.00	\$1183,528.0017,719.00		

Equipment Budget			
Number	Item	Per Unit	Extended
1	Holden Lowboy Trailer	\$31,683.00	\$31,863.00
4	Slip-on Units	\$13,930.00	\$55,720.00
9	Cat D2 Dozers w/Winch	\$160,272.00	\$1,445,148.00
3	Cat D2 Dozersw/Plow	\$162,920.00	\$488,760.00
2	Front Mount Winch	\$13,600.00	\$27,200.00

Sand Hills
\$87,618.50

Manchester
\$87,618.50

Auction Budget			
Number	Item	Per Unit	Extended
1	Prinoth Fire Track	\$200,063.53	\$200,063.53
1	Ford F-150 (WUI)	\$27,721.00	\$27,721.00

FFP Budget
\$5,962.50

Economic Development Budget			
Number	Item	Per Unit	Extended
1	Ford F-250	\$32,262.00	\$32,262.00
1	Ford F-150 (FIA)	\$29,857.00	\$29,857.00

Sand Hills			
Number	Item	Per Unit	Extended
2	Ford F-150	\$32,500.00	\$65,000.00

Manchester			
Number	Item	Per Unit	Extended
1	Ford F-150	\$31,912.00	\$31,912.00

The Forestry Commission prepared and organized equipment for auction. The auction process now takes place exclusively online at www.govdeals.com. The sale of equipment netted the Forestry Commission approximately \$652,863.60.

Law Enforcement

During FY 2021 the Forestry Commission had 41 sworn Law Enforcement Officers statewide. Four of these were investigators that focused primarily on complex timber theft, timber fraud and woods arson cases. Officers prosecuted 49 fire cases, 17 violations of state forest regulations, 15 miscellaneous cases and 18 game and fish cases. Total fines collected were \$14,067.50. Fines collected from these cases are retained in the county where the offense occurred.

Forestry Commission Law Enforcement Investigators investigated 109 timber theft/ fraud cases which represented a loss of \$451,763.00 to the victims. Investigators collected and returned 83% or \$376,879.60 to the affected landowners. During the year there were 259 fire investigations conducted with 124 of them escaped debris burns. There were 24 Burn Site Inspections and 25 Smoke Management Investigations. In May 2021, Governor McMaster signed H3541 into law, clarifying the State Forester's Burning Ban and providing the ability for SCFC officers to issue warning tickets. Law Enforcement staff worked to develop warning tickets and to provide training for SCFC officers. The use of formal warning tickets allow officers the option of issuing a formal, written warning ticket instead of a citation or verbal warning in situations where it is appropriate.

FOREST MANAGEMENT

There are 12.9 million acres of commercial forestland in South Carolina. According to 2018 National Woodlands Owner data (<https://www.fia.fs.fed.us/nwos/results/>), 87% of South Carolina's forests are privately owned, 60% of private forests are family-owned, and 47% of these owners live on the land. Forest industry has sold much of its forestland during the last 20 years and now owns only 329,600 acres (2.6%), which is a 38% increase from 2013 but down 85% since 2000. Public agencies (municipal, county, and federal) control 13% of South Carolina's forests.

The Forest Management Section assists South Carolina citizens with management and development of the forest resources of the state. Programs include woodland management assistance, reforestation assistance, forestry services, forest products utilization and marketing assistance, resource conservation and development, and urban & community forestry. These programs assist owners in growing more timber, aid industries in more efficient utilization of the timber resource, and foster conservation and multiple use of the forest resource. The Urban & Community Forestry program strives to help local government, educational institutions and non-profit organizations develop and enhance the benefits provided by trees and greenspace where we live and work.

In addition to programs designed to assist private landowners and local communities, the Forest Management Section also coordinates development and management of over 90,000 acres of forestland included in the state forest system. These lands are owned by the Forestry Commission and provide forest-based recreation opportunities and serve as examples of the benefits of active forest management. The State Lands Coordinator also assists other state agencies in the management of their forest resources.

Forest Management Assistance

Professional foresters from the Forestry Commission provide forest management advice and assistance to landowners. The land is examined, and a written forest management plan is prepared. Recommendations for management may include such silvicultural practices as forest protection, reforestation, harvesting, prescribed burning, wildlife habitat improvement and recreation.

This year, 1,192 management plans were prepared for 74,424 acres. Beginning in July of 1999, customer satisfaction surveys were sent to every landowner that received a forest management plan. In FY21, 100% of the landowners that responded to the survey indicated that they were satisfied with the management plan they received. Of these landowners, 100% also indicated that they intended to complete most or all the recommendations in their plan. Where practical, the landowner is referred to consulting or industrial foresters for assistance in carrying out management recommendations. This year 49 cases were referred to consulting foresters and 21 were referred to industrial foresters.

Forest management assistance, FY21

	Non-Cost-Share		Cost-Share		Forest Stewardship	
County	Exams	Acres	Exams	Acres	Plans	Acres
Abbeville	7	448	21	1275	3	217
Aiken	1	26	12	676	1	123
Allendale	2	180	5	462	1	88
Anderson	11	727	14	958	2	147
Bamberg	0	0	21	1330	0	0
Barnwell	1	183	12	607	4	1,184
Beaufort	1	5	4	205	0	0
Berkeley	6	701	2	124	0	0
Calhoun	4	713	16	808	1	24
Charleston	11	443	0	0	1	1,359
Cherokee	5	428	4	128	2	307
Chester	1	28	8	482	2	711
Chesterfield	10	344	78	3461	3	689
Clarendon	2	32	12	347	2	396
Colleton	16	1338	18	740	4	796
Darlington	8	325	35	1687	0	0
Dillon	18	1691	9	307	0	0
Dorchester	3	243	4	142	0	0
Edgefield	7	650	8	476	5	1,298
Fairfield	4	788	39	1634	2	195
Florence	41	2581	22	610	1	317
Georgetown	8	997	9	481	1	140
Greenville	7	229	4	85	0	0
Greenwood	7	355	22	1035	2	234
Hampton	0	0	26	1361	3	180
Horry	19	792	9	230	2	58
Jasper	2	70	10	766	2	105
Kershaw	6	349	24	1120	1	49
Lancaster	3	153	16	1091	1	224
Laurens	14	574	16	552	5	1,304

Lee	0	0	13	656	1	93
Lexington	14	676	20	1222	3	574
Marion	8	808	11	712	1	296
Marlboro	2	106	28	1423	0	0
McCormick	0	0	10	871	3	771
Newberry	8	379	38	1733	2	435
Oconee	8	285	5	114	1	72
Orangeburg	14	752	48	1920	2	552
Pickens	8	345	4	93	1	12
Richland	15	448	13	510	0	0
Saluda	6	620	25	883	1	142
Spartanburg	10	263	6	245	1	270
Sumter	2	42	11	713	0	0
Union	8	1039	6	434	0	0
Williamsburg	21	1680	36	2546	2	152
York	2	177	18	642	0	0
State Totals:	351	23013	772	37897	69	13,514

Cost-Share Programs

Forest Renewal Program (FRP) - State

In 1982 the program was funded for the first time by a \$100,000 state appropriation. This permitted an assessment of \$400,000 from forest industry and created a \$500,000 Forest Renewal Fund. The state funding was doubled effective July 1, 1996. This increase permitted an assessment of \$800,000 increasing the program to \$1,000,000.

Conservation Reserve Program (CRP) - Federal

The Conservation Reserve Program (CRP) began with crop year 1986 and was renewed with the passage of the 2018 Farm Bill. This program provides technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. CRP reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. CRP is administered by the USDA Farm Service Agency, with the SC Forestry Commission providing technical assistance for forestry practices. During FY21, SCFC foresters wrote 77 forest management plans for CRP encompassing 2,392 acres.

Environmental Quality Incentives Program (EQIP) – Federal

The Environmental Quality Incentives Program (EQIP) was created by the 1996 Farm Bill. EQIP provides financial assistance to help plan and implement conservation practices that address natural resource concerns and help improve soil, water, plant, animal, air and related resources on agricultural land and non-industrial private forestland. An additional purpose of EQIP is to help landowners meet Federal, State, Tribal and local environmental regulations. EQIP is administered by the USDA Natural Resources Conservation Service, with the SC Forestry Commission providing technical assistance for forestry practices. During FY21, SCFC foresters wrote 118 forest management plans for EQIP encompassing 5,806 acres.

Southern Pine Beetle (SPB) – Federal

The SPB Prevention and Restoration Cost-Share Program (SPB Program) was created in 2006 for non-industrial private forest landowners. It seeks to mitigate future loss from SPB by managing pine density through prevention and restoration practices. These practices ensure that a pine stand will be of merchantable size before the stress of being overly dense develops. Receiving income and maintaining vigorous growth are usually enough incentives for landowners to thin merchantable sized pine stands and, in return, reduce the potential loss from SPB. This program is funded by the USDA Forest Service and is administered in South Carolina by the SC Forestry Commission.

Statewide accomplishments for SCFC-administered cost-share programs, FY21							
–Reforestation and timber stand improvement							
Program	Number of Landowners	Acres Planted	Acres of Prescribed Burning	TSI Acres	Acres of Commercial Thinning	Acres of Precommercial Thinning	Cost Share Payments
FRP	275	12,302	0	245	0	0	\$932,043
SPB	67	3,287	0	0	0	142	\$283,473
Totals	342	15,589	0	245	0	142	\$1,215,516

The SC Forestry Commission surveyed landowners who received cost-share assistance both at the beginning of the process and at the end. This survey indicated that 64.3% of customers were satisfied with the assistance they received initially, and the follow-up survey indicated that 87.3% were satisfied with the assistance received at the end of the process.

FRP monitoring

The purpose of monitoring FRP applications is to fulfill the agency's regulatory responsibility regarding maintenance of FRP practices. SC Code of Laws 48-28-80 requires that landowners who receive FRP cost-share assistance maintain the land in a forested condition for 10 years or until a commercial harvest. SC Code of Laws 48-28-50 requires the SCFC to initiate recollection of FRP cost-share funds if a landowner does not meet the requirements of SC Code of Laws 48-28-80. SCFC Procedure 3214.17 was established to provide guidance regarding the monitoring of FRP practices. Due to Covid-19 social distancing requirements, and since FRP monitoring can largely be done remotely viewing aerial photography, during FY21 the Forestry Commission completed 2 years' worth of monitoring to ensure foresters were able to work, checking 617 sites for compliance with FRP maintenance requirements. Six sites, comprising 193 acres, were found to be out of compliance and recollection of the cost-share funds was initiated.

Seedling survival

Survival checks were made on cost-share plantings using a row count or 100th acre plot method for determining survival. An average of all survival checks was used to determine the statewide survival of 85% for loblolly pine plantings. Survival rates for longleaf pine plantings were tabulated separately. Plantings with longleaf seedlings had a survival rate of 82% when containerized stock was used. Due to a decline in the use of bare root longleaf stock no bare root longleaf plantings were sampled during FY21.

Forest Stewardship Program

The Forest Stewardship Program is a cooperative effort among the USDA Forest Service, Forestry Commission, other natural resource agencies and organizations, forest industry, and private forestry consultants in South Carolina to encourage the long-term stewardship of non-industrial private forest lands. Landowners are provided technical assistance through the development of a multiple resource management plan for their property addressing their management objectives.

During the past year, 69 Stewardship Plans were written in South Carolina on 13,514 acres. South Carolina Forestry Commission foresters authored all these plans, and due to outreach efforts to past plan recipients, the Forestry Commission recognized 13 landowners as Forest Stewards during FY21. Five of these landowners with forest acreage totaling 1,020 acres were later certified under the SC Tree Farm program.

Forest Stewardship staff also completed FSP Implementation Monitoring, conducting on the ground inspections on 24 Forest Stewardship Plans encompassing 3,708 acres. During FY21 it is estimated that 96% of all Forest Stewardship Plans are being implemented. In addition to adhering to the standard implementation monitoring protocol for FY21, the SCFC included additional evaluation of specific management outcomes that have resulted from the implementation of Forest Stewardship Plans. Results indicate that Forest Stewardship Plans are having a positive impact on specific management outcomes of interest in South Carolina (see table below). In FY21 we also evaluated whether the landowner being monitored was “highly engaged” at the time of monitoring. The Sustaining Family Forest Initiative (SFFI) classifies a landowner as “highly engaged” if they have reported doing several activities to protect and improve their woodlands. In South Carolina the SFFI classifies that 8% of all family forest landowners owning 10+ acres are highly engaged. Results from Forest Stewardship Implementation Monitoring indicate that 63% of landowners with Forest Stewardship Plans are highly engaged. Thus, landowners with Forest Stewardship Plans are significantly more likely to be engaged in the active management of their woodlands than the average landowner.

Forest stewardship monitoring evaluation results, FY21	
Management Outcome	Percent Implemented as Result of Plan
Timber Harvest	46
Tree Planting	50
Prescribed Burning	17

Wildfire Prevention Activity	63
Invasive Species Control	38
Wildlife Habitat Enhancement	63
Utilized Cost Share Assistance	25
Used Stewardship Plan to Qualify for Farm Bill Program	21
Used Forest Stewardship Plan to Qualify for Third Party Certification (Tree Farm, etc.)	8

No landowners returned customer surveys during FY21 after receiving a Forest Stewardship management plan.

Forestry Services

Through this program the SC Forestry Commission provides assistance to landowners and other state agency lands with afforestation, reforestation, and maximization of production from their woodlands. The landowner is charged the cost of all services performed. These services were available to landowners during FY21:

Firebreak Plowing - performed by Forestry Commission employees using agency equipment for \$140 for the 1st hour and \$85 for each additional hour. In FY06, separate rates were established for firebreaks constructed with a heavy tractor. For FY21, these rates were \$160 for the 1st hour and \$100 for each additional hour.

Prescribed Burning - performed by Forestry Commission employees using agency equipment for \$25 per acre for understory burns and \$35 per acre for site preparation burns and for understory burns in mountainous terrain. Firebreak plowing costs are not included. The minimum charge for this service was \$500 during FY21.

Prescribed Burning Standby - an agency tractor and employee on standby at a burning site for \$80 for the 1st hour and \$40 for each additional hour while the landowner performs burning under an approved plan. The minimum charge for this service was \$120.

Equipment Rental Program – agency-owned tree planters and drum choppers made available to private landowners at rates of \$5 and \$20 per acre respectively. The minimum charges were \$25 and \$100.

Timber Marking - performed by Forestry Commission employees at the rate of \$10 per thousand board feet and \$5 per cord.

Forestry services accomplishments – FY21			
Service	Number of Tracts	Units of Measure	Receipts FY21
Firebreak Plowing	313	706 miles	\$136,902.50
Prescribed Burning	120	11,716 acres	\$224,671.50
Prescribed Burning Standby	14	1,193 acres	\$4,200.00
Equipment Rental	6	44 acres	\$235.00
Water Bar Construction	13	420 bars	\$12,672.50
Mired Equipment Extraction	43	-	\$18,400.00
Timber Marking	0	0 acres	\$0.00
Totals	509	-	\$397,081.50

The SC Forestry Commission sends customer surveys to all landowners who receive forestry services. In FY21, 100% of the customers who responded reported they were satisfied with our forestry services and 100% of those responding indicated they plan to use our services again.

Forest Health

The Forest Health Program, in cooperation with the state Department of Plant Industry, and the US Forest Service (USFS), maintains a program to detect, evaluate, and suppress forest pests. Through cooperative agreements, these agencies make their technical assistance and advice available to the SC Forestry Commission (SCFC).

The current forest pest detection and reporting system involves the reporting by field foresters of forest pests that are causing abnormal losses, that require control action, or which may present new problems. Aerial surveys are made periodically for specific pests to determine occurrence and the need for suppression action.

Major Insect Problems

SOUTHERN PINE BEETLE AND BARK BEETLES

In FY21, losses due to the Southern Pine Beetle (SPB) were minimal. Aerial surveys were limited to Edgefield, McCormick and Berkeley counties, areas where our spring trapping predicted there might be some activity. An outbreak that had been ongoing probably since 2019 was discovered on the Francis Marion National Forest.

The SCFC continued to participate in the SPB Prevention and Restoration Program funded by the USFS. This program's objective is to prevent or reduce the potential damage by SPB. SCFC personnel make forest management recommendations known to minimize future beetle damage. These include thinning, prescribed burning, planting at low density, matching planted species to site, and other mitigation measures. This program is managed by a coordinator whose salary is funded by the program. In FY21 3,170 acres of pine planting at a reduced tree density was completed and 142 acres were pre-commercially thinned.

ASIAN LONGHORNED BEETLE

On May 29, 2020 a homeowner in Hollywood, SC, discovered a beetle that was confirmed to be *Anoplophora glabripennis*, the Asian longhorned beetle. This beetle is an invasive destroyer of hardwoods that has been reported in New York, New Jersey, Massachusetts, Illinois, and Ohio, as well as Canada. It has been eradicated from Canada, Illinois, New Jersey, large parts of Massachusetts and New York, so eradication is feasible. USDA Animal and Plant Health Inspection Service (APHIS) and Clemson Department of Plant Industry (DPI) are leading surveys to map the infestation and coordinate the eradication. Quarantines restricting the movement of hardwood will be imposed, but likely will be restricted to a very small part of the state. So far, 58,967 host trees have been surveyed on 7,616 acres, of which 5,098 host trees have been

confirmed positive for infestation. By imposing a mile-and-a-half buffer around infested trees, 76.38 square miles are deemed infested.

EMERALD ASH BORER

As of June 2021 emerald ash borer was found in Oconee, Spartanburg, Pickens, Anderson, Cherokee, York and Greenville counties. Emerald ash borer has also been found in Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New York, North Carolina, Ohio, Ontario, Pennsylvania, Tennessee, Quebec, Virginia, West Virginia, Wisconsin and Georgia. We continue to monitor stressed, dying, or dead ash trees in South Carolina brought to our attention by the public. So far, infested trees have only been detected in Greenville and Pickens counties.

WALNUT TWIG BORER/THOUSAND CANKER DISEASE

Currently this beetle and the fungus it vectors has not been detected in South Carolina. On the east coast, they have been found in Tennessee, North Carolina, Virginia, Ohio, and Pennsylvania, but it has been six years since a walnut tree in these states has tested positive for the fungus. Clemson's Cooperative Agricultural Pest Survey (CAPS) has placed early detection traps in 12 counties and has not detected the walnut twig beetle.

EUROPEAN (SIREX NOCTILIO) WOODWASP

This woodwasp is currently found in several counties in New York, Pennsylvania, Michigan, Connecticut, Ohio and Vermont. The spread of the European woodwasp has been slow in these regions, but movement of firewood and other solid wood could bring this insect to the Southeast sooner than expected. Trapping has been discontinued, but southern state forestry agencies have developed recommendations in an action plan in the event it arrives in the Southeast.

REDBAY AMBROSIA BEETLE/LAUREL WILT DISEASE

In November 2004, an exotic ambrosia beetle, *Xyleborus glabratus* Eichhoff, was discovered in a dead redbay tree on Hilton Head Island. The beetle attacks redbay trees and introduces a fungus (*Raffaelea lauricola*) into the tree. Since the discovery of *X. glabratus* in 2004, the beetle and its associated fungus have been found in twenty (20) South Carolina counties: Dillon, Lee, Jasper, Beaufort, Hampton, Colleton, Charleston, Bamberg, Barnwell, Allendale, Dorchester, Marion, Orangeburg, Horry, Georgetown, Berkeley, Lexington, Aiken, Newberry, and Sumter. The beetle and fungus have also been found in Georgia, Florida, Mississippi, Tennessee, Kentucky and Alabama. Unfortunately, in the areas where the beetle has been found, there has been a large loss of redbay (up to 90% in some locations). Most infestations are now in sassafras.

Major Disease Problems

OAK WILT

Oak wilt disease has been identified in Aiken, Barnwell, Chesterfield, Kershaw, Lancaster, Lee, Lexington, Richland, and Darlington counties. This disease appears to be static and causing losses only to low value oaks. Since there is potential for loss of valuable trees, including urban trees, surveys and on-call evaluations are made to evaluate the spread.

DUTCH ELM DISEASE

Dutch Elm disease has been confirmed in the past in Aiken, Anderson, Cherokee, Chester, Chesterfield, Edgefield, Fairfield, Greenville, Greenwood, Kershaw, Lancaster, Laurens, Lexington, Marlboro, Newberry, Oconee, Pickens, Richland, Saluda, Spartanburg, and York counties. It is expected to gradually spread through the state because the primary agent of spread is the smaller European elm bark beetle that occurs statewide. However, this disease has not been detected in South Carolina for many years and may be on the decline due to loss of susceptible cultivars and planting of resistant hosts.

DOGWOOD ANTHRACNOSE

In 1988 a new anthracnose disease of dogwood was noted for the first time in South Carolina. This disease is caused by the fungus, *Discula destructiva*. Symptoms include foliage blighting, canker formation, and progressive deterioration. The fungus usually kills infected trees in two to three years. At this time infected trees have been found in Anderson, Greenville, Laurens, Oconee, Pickens, and Spartanburg counties. Dogwoods in those counties are monitored periodically to determine the rate of spread of this potentially devastating disease.

SUDDEN OAK DEATH

Sudden oak death is a disease caused by an oomycete in the genus *Phytophthora*. It is presently known to occur only on the West Coast in the United States. This disease kills oaks and causes leaf spots on many other plant species. Testing of eastern species of oaks in California has shown that they could be susceptible to this disease if the disease were to occur in the eastern United States. Unfortunately, several nursery plants infected with *Phytophthora ramorum* were shipped to South Carolina in 2004 from the area of known infestation. No local spread of the disease was detected and the infected nursery stock was destroyed.

As part of a Southeastern project, we are cooperating with Clemson University in a stream baiting survey to determine if the disease occurs in South Carolina. Stream baiting survey to detect the fungus that causes SOD continued in the spring of 2020. The pathogen has not been detected in SC since 2004.

COGONGRASS

Cogongrass, a non-native federally regulated noxious weed, has been detected in 13 South Carolina counties: Anderson, Pickens, Greenville, York, Aiken, Allendale, Hampton, Beaufort, Colleton, Dorchester, Charleston, Williamsburg and Florence. Most infestations are small, comprising a total of less than 2 acres, and all acres have been treated by Clemson University Department of Plant Industry. Seven (7) counties (York, Charleston, Allendale, Hampton, Beaufort, Williamsburg, and Florence) have active cogongrass sites while the sites in the remaining six counties are considered inactive. All sites (both active and inactive) will continue to be monitored to detect re-sprouting in the future.

INSECT AND DISEASE LABORATORY

Commission foresters and Insect and Disease staff made more than 200 field checks of insect and disease problems and made recommendations for prevention and control. Other inquiries were handled by telephone, mail, and personal contact.

FOREST HEALTH SURVEYS

The SCFC entered into an agreement with the USFS to evaluate permanent Forest Health plots throughout South Carolina. This was carried out by the Resource Development Section and reported in their section of this annual report. As another part of this program, the Forestry Commission also received additional funding for off-plot activity to survey for and report on other forest insects and diseases.

Urban & Community Forestry

The Urban and Community Forestry program exists to provide technical, financial, and educational assistance to municipal and county governments and others for the purpose of creating, maintaining, and enhancing community forest conservation and management within their jurisdictions; to provide for, coordinate and/or conduct information, education and training regarding community forestry, wildland-urban interface issues, and arboricultural best management practices; and to provide grants to local governments, non-profit organizations, and educational institutions of higher learning to create, enhance and support long-term local and regional community forestry programs. This assistance is accomplished through a variety of ways: direct contact, diverse and cooperative partnerships, and the financial assistance grant program.

Expected results include, but are not limited to, improved air quality; energy conservation through reduced heat island effect in downtown areas; local government recognition and management of the community tree resource; sustained financial support on the local level for community tree

management; more professional public tree managers to provide safe walkways, streets and parks; and more public trees planted and maintained to beautify, cool, and clean South Carolina communities. These results occur when a community or county government works toward accomplishing a natural resource inventory and management plan, employs professional urban forest staffing, adopts and implements natural resource policy, and works in partnership with local advocacy organizations.

Urban and Community Forestry Financial Assistance Program

The Community Forestry Financial Assistance and Partnership Program is a state program funded with federal-level monies appropriated each year by Congress. When available, these funds are funneled through the USDA Forest Service to the SC Forestry Commission to administer. South Carolina received \$125,000 in federal funding through the competitive grant process (Landscape Scale Restoration). The goal of the grant project is to create resilient coastal forests in the Southeastern US. The project will use GIS to map extent and intactness of current forest cover for several coastal communities, develop risk assessments and future forest cover projections and develop a coastal forest resiliency plan for each pilot community. This project will aid communities in better planning to meet these challenges by assessing the current extent and health of coastal forests, associated benefits provided (environmental, social and economic), risk factor assessment (development, pests and storm surge) and by developing plans for meeting these challenges. This is a regional effort with South Carolina as the lead state and Georgia and Virginia as partners. The second funded LSR project is for “Healthy Trees Healthy Lives” in which all 13 southern states are participating. The purpose of the grant is to provide an outreach and awareness initiative where state forestry agencies share research that supports the message that trees have a positive impact on human health with partners in the health community. South Carolina received \$10,000 from this grant to create educational material to share with partners in human health fields. The third funded LSR project is the “Economic Impact of Urban and Community Forestry in the Southern Region”. The total amount of the federal award is \$150,000 which will fund a study for all 13 states that will gather data on the value of the resource and job creation to help solidify why investing in community forestry is essential. The region-wide analysis will coordinate with the Northeastern Area LSR grant project and help define the importance of the industry on a broader scale.

The Urban and Community Forestry program also partnered with Trees SC (urban and community forestry council) to assist with urban forestry and arboricultural training and continuing education for public tree managers and other professionals. SCFC provided a speaker for the Trees SC annual conference and partnered with Trees SC to provide two SC Arborist Workshops.

The U&CF program has six grant agreements with communities: North Augusta, Camden, Greenville, Bennettsville, Florence, and Myrtle Beach. These communities applied for assistance with projects that help maintain and care for their urban forests. Five grantees applied for assistance with conducting tree inventories; one grantee applied for assistance with attending a course to prepare two employees for taking the certified arborist exam. North Augusta completed their tree inventory, and the remaining communities are continuing to work on their 2018 projects. In 2019, the U&CF program made six new agreements with communities: North Charleston, North Myrtle Beach, Camden, Trees SC, Trees Greenville, and Myrtle Beach. Two communities applied for assistance with accomplishing tree inventories. The remaining funded projects were educational training for urban and community forestry staff and community tree planting.

The U&CF program is partnering with the Green Infrastructure Center (GIC), a non-profit organization, on a Community Tree Planning and Planting Campaign. The project entails partnering with Greenville, Irmo, and Summerville to assist communities with strategic tree planning and planting. This will demonstrate the use of data in planning where, when and how to plant trees, as

well as where to retain canopy and how to motivate planning across both public and private sectors. GIC will work with communities to make land cover maps and planting strategy maps. Then, a strategic planting map will be developed in collaboration with municipalities, local agencies and non-profit groups.

The SCFC U&CF program partnered with GIC to develop a Planners Forest Toolkit to provide planners with a suite of policy tools and practices to expand and/or conserve forests. The Toolkit includes examples of successful forest conservation policies from across SC as well as best policy practices.

The U&CF program is working on a project called Canopy Coaching in partnership with GIC to assist communities with technical support to map their urban canopy, plantable areas and set urban canopy goals. Participating communities receiving assistance are Richland County, Mt. Pleasant, Santee-Lynches COG, Beaufort County and Simpsonville.

Tree City/Tree Line USA/Tree Campus

Sponsored on the national level by the Arbor Day Foundation and others, the Tree City USA program is administered in South Carolina by the SC Forestry Commission. This program seeks to stimulate and promote the management of community trees by recognizing towns and cities which meet the following criteria: (1) establishment of a municipal tree care ordinance, (2) expenditure of at least two dollars per capita on their community forestry program, (3) establishment of a legally constituted tree board or permanent staff to address tree issues, and (4) observance of Arbor Day by a mayoral proclamation and official ceremony. The SC Forestry Commission recognized 44 municipalities under the Tree City USA program during FY21.

The Tree Line USA program, also sponsored by the National Arbor Day Foundation, seeks to stimulate and promote proper utility line clearing and safety techniques of private and public utility companies. In order to qualify as a Tree Line USA, a utility must meet three criteria: (1) perform quality tree care regarding pruning, trenching and tunneling methods; (2) provide opportunities for annual utility line worker training; and (3) sponsor an ongoing community tree planting program to include an Arbor Day celebration and at least one educational mailing to customers. The Forestry Commission and the Arbor Foundation recognized 3 municipally owned utilities as Tree Line USA certified in FY21.

The Tree Campus USA program, sponsored by the National Arbor Day Foundation, encourages institutions of higher learning to promote proper management of campus trees. South Carolina maintained 7 Tree Campus USA institutions in FY21.

Technical Assistance and Educational Program

The South Carolina General Assembly provided state funding for an Urban Coordinator position and three Regional Urban Forester positions beginning in July 2019 which increases our program exposure and assistance to customers across the state of South Carolina. Through the direct technical assistance of the community forestry staff to municipalities, schools and partner organizations, the urban and community forestry program accomplished the following in FY21:

Types of technical assistance	Program accomplishments	
Program Development/Expansion	# of Entities	# of Assists
Municipal Government	67	234
Non-profit/trade organizations	19	98
Educational Institutions	20	48

County Government	24	63
State Government	6	31
Others	33	38
TOTAL	163	512

Type of Tree City Program	Number
Tree City USA	44
Tree Campus USA	7
Tree Line USA	3
Total	54

Public Info/Education	Adults	Youth	Total
# Programs	10	1	11
# People	963	10	973
# Seat Hours	2,369	10	2,496

State Forests/State Lands

Harbison State Forest

Harbison State Forest (HSF), located approximately 9 miles from downtown Columbia, encompasses 2,176 acres. The Forest was purchased in 1951 and became the site of the agency headquarters in 1963. Following the adoption of a Master Plan in 1981, the Forest began to be developed as an Educational State Forest. Recreational use grew dramatically in the early '90s with Harbison soon gaining the reputation as a mountain biking mecca for the area. A yearlong vehicle survey was conducted during FY17 which estimated 132,000 user visits during that time.

Receipts for operating budget, FY 2020-21	
Activity	Receipts
Wildlife Management Area Payments	\$0.00
Prior Year Refund	\$2,437.49
User Fees	\$81,117.63
Sale of Timber	\$6,006.04
Sale of Pine Straw	\$0.00
Donations	\$2,430.57
Rental of State Property	\$550.00
Other	\$5,615.27
Total	\$98,157.00
<i>Note: 25% of all receipts are paid to the Richland County School System. This amounted to \$21,780.92 for the fiscal year (donations and rental income are not included when calculating the total to be dispersed to the school system).</i>	

SILVICULTURAL PRACTICES

A total of 204 acres were prescribed burned for wildlife habitat enhancement, hazard reduction, hardwood control, aesthetics, and site preparation purposes. One fuel chip sale took place on

approximately 314 acres in FY21. Approximately 14 acres were planted in loblolly pine with an additional 5 acres planted in containerized longleaf pine.

The following species and number of seedlings were planted:

<u>Species</u>	<u>Acres</u>	<u>Seedlings</u>
Containerized longleaf pine	5	1,000
Bareroot loblolly pine	14	8,000

FOREST PROTECTION

No wildfires occurred during this fiscal year. Trees that were considered hazardous to forest visitors and/or to buildings were felled.

RECREATION/EDUCATION

The COVID-19 pandemic greatly affected the operations of Harbison State Forest. As people sought out safer recreational opportunities Harbison State Forest saw a noticeable increase in individual use by the public. These same conditions also limited group gatherings and HSF was the host site for only 4 events: two 50k races, one 10K race, and one mountain biking race.

In addition to these events, several trail workdays were conducted during FY21. These events included improving the trails by pruning of overhanging branches and brush and the rehabilitation of wet areas and closed trails. Friends of Harbison State Forest (FoHSF) members have taken on more responsibility in the care of the trail system with reduced SCFC staffing. This group continues to meet monthly to plan events and promote the Forest. The mission of the Friends group is to “preserve and promote the recreational and educational aspects of this urban forest resource.” The current membership of this group is estimated at 160 individuals.

There was no use of the 4 primitive campsites in FY21.

The canoe landing at Harbison State Forest provides access to the Broad River. During FY21, 39 groups filed float plans for a total of 96 paddlers.

WILDLIFE MANAGEMENT

Five wildlife viewing areas totaling 2½ acres are maintained each year.

RARE, THREATENED AND ENDANGERED SPECIES MANAGEMENT

No threatened or endangered species have been found on Harbison State Forest.

RESEARCH

SC DNR continued collecting samples for the North American Bat Monitoring Program.

Manchester State Forest

Manchester State Forest, located in Sumter County and Clarendon County, is currently comprised of approximately 28,764 acres. From 1939 to 1955, Manchester was leased by the State of South Carolina from the federal government and managed by the South Carolina Forestry Commission. The State received title to the property on June 28, 1955.

Receipts for operating budget, FY21	
Activity	Receipts
Wildlife Management Area Payments	\$156,725.76

Prior Year Refund	\$2,070.72
User Fees	\$19,206.00
Sale of Timber	\$484,631.80
Sale of Pine Straw	\$141,583.00
Donations	\$2.00
Rental of State Property	\$44,038.68
Other	\$20,610.50
Total	\$868,868.46
<i>Note: 25% of all forest receipts are paid to Sumter and Clarendon County School Systems for a total of \$200,536.64 (donations, prior year refunds, and rental income categories are not included when calculating the total to be dispersed to the school systems).</i>	

SILVICULTURAL PRACTICES

A total of 904 acres were prescribed burned for wildlife habitat enhancement, hazard reduction, hardwood control, aesthetic, and site preparation purposes. 132 acres were sold for final harvest cuts and 314 acres were sold for improvement cuts (thinning). 1,346 acres were sold for pine straw raking. Inventory data was collected on 894 plots which covered 3,076 acres on 98 different stands.

The following species and number of seedlings were planted:

<u>Species</u>	<u>Acres</u>	<u>Seedlings</u>
Containerized longleaf pine	234	146,792
Bareroot loblolly pine	71	38,624

FOREST PROTECTION

MSF had 1 wildfire during FY21 totaling 2 acres. Manchester personnel assisted regional personnel as well as the local fire departments with several fires which were adjacent to the State Forest as well as in- and out-of-state assignments.

RECREATION/EDUCATION

Recreational use continues to be heavy. Hunting, fishing, horseback riding, motorcycle/ATV riding, and use of the rifle/pistol range continue to be favorite activities. Mountain bike riding has all but ceased due to the increase of free mountain bike riding offered at Poinsett State Park which is managed by SCPRT.

Recreational permit sales consisted of 973 daily permits and 296 annual permits. This does not include hunting or fishing users.

The Manchester State Forest director is a member of Central Carolina Technical College's Natural Resource Management Committee. The committee makes curriculum suggestions and works with school administration to improve the NRM program. Manchester also hosts some of the classes for field training labs (timber cruising, seedling planting density and survival, ecology, etc.)

Five special use permits were issued for organized events:

- Manchester Trail Riders Fall Ride on October 31, 2020; 171 riders
- Carolina XC AMA Burnt Gin Hare Scramble on January 31, 2021; 148 riders
- SERMA Annual Sumter National Enduro on February 1, 2021; 813 riders

- Manchester Trail Riders Spring Ride on March 20, 2021; 208 riders
- SERMA Dual Sport Ride on May 23, 2021; 39 riders

WILDLIFE MANAGEMENT

Approximately 28,000 acres of the forest are presently included in the Wildlife Management Area Program through a cooperative agreement between the SC Department of Natural Resources (SCDNR) and the South Carolina Forestry Commission.

MSF has 4 public dove fields consisting of 271 acres planted in sunflowers, corn, and wheat. 640 acres are maintained as wildlife openings. MSF also has a category II duck impoundment that consists of 297 acres.

Wildlife surveys are conducted in conjunction with SCDNR for fox squirrels, turkey, deer, quail, etc.

RARE, THREATENED AND ENDANGERED SPECIES MANAGEMENT

Manchester currently maintains 5 clusters of red-cockaded woodpeckers. Colony sites continue to be monitored along with scouting for new cavity and start trees in cooperation with biologists from the neighboring Poinsett Weapons Range (US Air Force).

RESEARCH

Manchester continues to cooperate with the SCFC Nursery & Tree Improvement Section by providing sites for clone banks, seed orchards, and progeny tests.

Manchester issued 1 research special use permit related to callery pear.

Wee Tee State Forest

Wee Tee State Forest, located on the Santee River in lower Williamsburg and Georgetown Counties, was acquired by the South Carolina Forestry Commission in November of 2003 through the partnership of eight participants. These partners included the South Carolina Forestry Commission, South Carolina Department of Natural Resources, The Conservation Fund, U. S. Forest Service, Forest Legacy Program, U. S. Fish and Wildlife Service, North American Wetlands Conservation Act grant, Ducks Unlimited, National Wild Turkey Federation, and Anheuser-Busch. Wee Tee contains 12,394 acres of which 770 acres is comprised of planted loblolly pine plantations and upland pine-hardwood types and the remaining 11,624 acres is comprised of bottomland hardwood types with the associated oxbow lakes and creeks. Being in the Santee River Focus Area of Ducks Unlimited's Lowcountry Initiative, it is a very significant, unfragmented bottomland hardwood forest. Its significance lies in its watershed and water supply protection, habitat for wildlife and a number of threatened and endangered species as well as the opportunities it provides for recreation, forest practices and education.

Receipts for operating budget, FY21	
Activity	Receipts
Wildlife Management Area Payments	\$64,738.72
Prior Year Refund	\$0.00
User Fees	\$0.00

Sale of Timber	\$0.00
Sale of Pine Straw	\$0.00
Donations	\$0.00
Rental of State Property	\$0.00
Other	\$0.00
Total	\$64,738.72
<i>Note: 25% of all forest receipts are paid to Williamsburg and Georgetown County School Systems for a total of \$16,184.68 (donations, prior year refunds, and rental income categories are not included when calculating the total to be dispersed to the school systems).</i>	

SILVICULTURAL PRACTICES

One hundred nine acres were chemically site prepared and planted with improved coastal loblolly pine during FY21.

The following species and number of seedlings were planted:

<u>Species</u>	<u>Acres</u>	<u>Seedlings</u>
Bareroot loblolly pine	109	59,300

FOREST PROTECTION

Gates have been constructed and placed on all known entrances into Wee Tee to control access for the protection of the property and infrastructure.

RECREATION

Hunting, fishing, canoeing, and kayaking continue to be the main recreational activities at Wee Tee.

WILDLIFE MANAGEMENT

All of Wee Tee State Forest is included in the Wildlife Management Area Program through a cooperative agreement between the SC Department of Natural Resources (SCDNR), and the South Carolina Forestry Commission.

RESEARCH

No research special use permits were issued.

Sand Hills State Forest

Sand Hills State Forest (SHSF) encompasses 46,838 acres, with 45,338 acres in Chesterfield County, 1,000 acres in Darlington County and 500 acres in Kershaw County. The forest was operated under a use agreement with the federal government from 1939 until 1991. In July of 1991, title to Sand Hills State Forest was transferred to the South Carolina Forestry Commission.

Receipts for operating budget, FY21	
Activity	Receipts
Wildlife Management Area Payments	\$94,308.84
Prior Year Refund	\$5,252.60

User Fees	\$5,488.00
Sale of Timber	\$415,379.41
Sale of Pine Straw	\$2,318,431.14
Donations	\$39.00
Rental of State Property	\$6,659.00
Other	\$1,651.79
Total	\$2,847,209.78
<i>Note: 25% of all forest receipts are paid to Chesterfield, Darlington, and Kershaw County School Systems for a total of \$708,351.85 (donations, prior year refunds, and rental income categories are not included when calculating the total to be dispersed to the school systems).</i>	

SILVICULTURAL PRACTICES

During FY21, 37 acres were chemically site prepared and planted with longleaf pine seedlings. A total of 1,330 acres of timber stand improvement was completed through pine straw enhancement contracts. A total of 1,046 acres were prescribed burned for wildlife habitat enhancement, hardwood control, and fuel reduction within 11 burn units.

<u>Species</u>	<u>Acres</u>	<u>Seedlings</u>
Containerized longleaf pine	37	23,000

FOREST PROTECTION

Sand Hills State Forest had five wildfires in FY21 totaling 36 acres.

PINE STRAW & TIMBER

Sand Hills State Forest sells pine straw through advertised bid sales and negotiated sales. In FY21 there were 5,496 acres sold on bid sales for \$1,020,187.14 and 7,751 acres sold on negotiated sales for \$1,298,244.00. In FY21 there was a total of \$2,318,431.14 worth of pine straw sold on Sand Hills State Forest.

In 1999 Sand Hills started a pine straw enhancement program. Under this program, an individual from the public can enter into a multi-year contract with the Forestry Commission to rid longleaf pine stands of scrub oaks for pine straw production. The individual agrees to eradicate 90% of all hardwoods on a tract of land using herbicides. In exchange, they may harvest all the pine straw that falls during the contract period. When the contract expires, the acreage becomes part of SHSF's quality straw production program. The straw from these areas is typically offered for sale on a lump sum, sealed bid basis.

During FY21 Sand Hills issued seven pine straw enhancement contracts which consisted of 22 pine stands for a total of 872 acres and six enhancement contracts expired for 659 acres reverting to SHSF for pine straw sales. At the end of FY21 there were a total of 21 active enhancement contracts which consisted of 82 pine stands that totaled 3,699.7 acres.

As a result of increased pine straw activity on Sand Hills State Forest, a vehicle registration system was implemented to ensure that licensed, insured vehicles were operating on the Forest. The registration stickers provide a visible means to those patrolling the Forest that the participant has complied with the program. The registration stickers are used for pine straw sales and for state forest

users that want to access the “authorized vehicles only” truck trails. In FY21 Sand Hills State Forest issued 271 stickers.

In FY21 Sand Hills had a total of 8 advertised timber sales for 1,222 acres. Seven of these sales were sold on a per unit basis, and one was a lump sum sale. Sand Hills had a total of 6 negotiated timber sales totaling 138 acres. All negotiated sales were sold on a per unit basis, 3 of which were fuel chip only sales.

RECREATION

Recreational use of the Forest continues to be fairly heavy. Hunting, fishing, hiking, bird watching, and camping continue to be favorite activities. Equestrian use on SHSF remains low due to the free riding that is offered at H. Cooper Black Recreational Area under the management of SCPRT.

Sugarloaf Mountain provides seven primitive camping sites for family camping and eight primitive equestrian campsites. Sand Hills personnel booked 190 reservations for these sites this year. An estimated 4,128 visitors* used the campsites and trails. The number of visitors does not include day users, nor does it include any visitors from any other user group (i.e. hunters, fishermen, birdwatchers, pine straw workers, etc.). Campsites rental rates are \$15 per site for sites with shelters and \$10 per site for those without shelters. Sand Hills received \$6,605.00 in revenue from camping in FY21.

One hundred twenty-three trail use permits were issued for horseback riding in FY21. Revenue from trail use permits totaled \$4,152.00.

**Number of visitors does not include day users, nor does it include any visitors from any other user group (i.e. hunters, fishermen, birdwatchers, pine straw workers, etc.).*

Free-use permits are issued for any activity at Sand Hills State Forest that does not have a fee. SHSF personnel issued 22 free use permits this year. Six of the permits were for raking pine straw for personal use and 16 were for gathering firewood.

Three special-use permits were issued for organized events.

- Sand Hills Stampede Endurance Ride on October 31,, 2020 -- 64 riders.
- Sand Hills Spring Fling Endurance Ride on February 27, 2021 -59 riders.
- Sand Blast Rally on March 6, 2021 -- 78 competitors’ entries with 29 cars, 20 motorcycles.

These events bring many visitors to Sand Hills State Forest and surrounding areas and have a positive economic impact on the area. The local involvement and sponsorship have increased each year that these events are held.

EDUCATION

SHSF staff did not make any classroom visits in FY21 due to Covid-19.

WILDLIFE MANAGEMENT

Approximately 47,174 acres of the Forest is included in the Wildlife Management Area Program. This is a cooperative agreement between the SC Department of Natural Resources (DNR) and the SC

Forestry Commission. SHSF has two public dove fields. The Wilkes Chapel field is 57 acres and planted in corn, sunflowers, and bicolor. The Davis Field is 40 acres and is planted in corn, sunflowers, and bicolor.

Sixty acres (30 plots) were planted as wildlife food plots. These plots were planted in winter peas and oats. No bicolor patches were bush hogged.

SHSF continues to conduct surveys for DNR. Ducks, turkey and quail were surveyed to track population trends.

RARE, THREATENED AND ENDANGERED SPECIES MANAGEMENT

Population Trends: There are currently 121 managed Red-cockaded Woodpecker clusters on SHSF. During FY21, 111 clusters were active and 10 clusters were inactive. Of the 10 inactive clusters, four are relic clusters. There were 111 recorded potential breeding groups (PBG's), with 108 total nest attempts. Nine of these nest attempts failed. Among these, two PBG's had second nest attempts, both of which successfully produced fledglings. One PBG also had two successful nest attempts. In all, there were 102 successful nests.

LAW ENFORCEMENT

Officers issued 2 citations in FY21.

RESEARCH

A longleaf pine natural regeneration research project in conjunction with the US Forest Service is still ongoing and has been in effect since 1978.

Poe Creek State Forest

Poe Creek State Forest (PCSF) is composed of two tracts of land totaling 2,511 acres. The Poe Creek tract is in Pickens County adjacent to SC Highway 11 and contains 1,806 acres. This property was purchased from Crescent Resources, Inc. on April 6, 1999. Approximately 800 acres is under forest management with 610 acres of planted pine and 190 acres have been clearcut and allowed to regenerate naturally to native hardwood species. The remaining 1,006 acres are in natural upland hardwood type and a mixture of white pine and hardwoods. The steep terrain in this area limits the forest management activities that can be implemented. The Piedmont Forestry Center (PFC) tract, located 5 miles north of Salem in Oconee County, encompasses 705 acres. It includes a conference center, picnic shelter, and two houses that are available for rental groups. The timber on this property is managed along with that on PCSF.

Receipts for operating budget, FY2020-21	
Activity	Receipts
Wildlife Management Area Payments	\$21,333.41
Prior Year Refund	\$0.00
User Fees	\$0.00
Sale of Timber	\$0.00
Sale of Pine Straw	\$0.00
Donations	\$0.00

Rental of State Property	\$4,650.00
Other	\$1,943.67
Total	\$28,322.08
<i>Note: 25% of all forest receipts were paid to Pickens and Oconee County schools for a total of \$5,333.35 (donations, prior year refunds, and rental income categories are not included when calculating the total to be dispersed to the school systems).</i>	

SILVICULTURAL PRACTICES

No timber sales occurred on PCSF during FY21. Multiple prescribed burns were conducted on PCSF totaling 119 acres. A Joint Chiefs Grant reimbursed \$990 for 33 acres of understory burning. Approximately 6 acres of fields were burned to maintain openings.

RECREATION/EDUCATION

Use of the PCSF during FY21 was light, with numerous groups and outreach programs canceled due to the COVID-19 pandemic.

Poe Creek State Forest use, FY21		
Use	Days	# of People
Gatehouse Rental	1	3
Cabin Rental	32	182
Conference Room	2	60
Scouts	2	24
Wood Magic Forest Fair	0	0
Dove Shoots	2	42
Other & Fishing Rodeo	12	~24
Totals	51	335

FOREST PROTECTION

One wildfire occurred on PCSF as the result of an escaped prescribed burn. It grew to approximately 35 acres before containment. No assets were threatened, and minimal tree damage occurred.

WILDLIFE MANAGEMENT

The SC Forestry Commission and the Department of Natural Resources cooperated on the planting of multiple wildlife openings & cool season plantings throughout both properties. Both tracts of the PCSF are in DNR's Wildlife Management Area program and are open to public hunting. DNR fisheries also stocks one mile of Cheohee Valley Creek that runs through the Piedmont Forestry Center property.

Feral hog trapping was also conducted at the Piedmont Forestry Center.

RARE, THREATENED AND ENDANGERED SPECIES MANAGEMENT

Poe Creek State Forest continues to provide habitat for several populations of federally endangered plants.

INFRASTRUCTURE

Road access at the Piedmont Forestry Center was maintained by mowing of road shoulders and grading where needed. Two large sheds were sealed to repair roof leaks and two chimney leaks were repaired on the houses.

RESEARCH

No research took place on Poe Creek State Forest during FY21.

OTHER USES

The SC Army National Guard based out of Donaldson Center uses the landing zones at Piedmont Forestry Center for military training. They operate a company each of Lakota, Blackhawk and Chinook helicopters.

The SC Army National Guard and SC Forestry Commission personnel conducted a two-day joint training operation using the PFC as a basecamp. Blackhawk helicopters from McEntire ANG flew up and stayed on the grounds. Both days they practiced bucket drops on mock fires with Commission employees gaining experience directing air assets to targets. A refueling station and mobile communications were set up at the PFC. State Fire and SCHART also used this operation for emergency incident training.

Niederhof Forestry Center

Niederhof Forestry Center (NFC) is located just north of the town of Tillman and approximately 9 miles northwest of Ridgeland in Jasper County and encompasses 1,594 acres. The SCFC Tree Improvement and Nurseries Section manages some of the property for tree improvement and as a production seed orchard. The remaining acreage is managed as multiple use demonstration forest and for outreach activities that include specialized hunts.

RECEIPTS

A timber sale in March 2021 generated \$66,200 in receipts.

SILVICULTURAL PRACTICES

Personnel prescribed burned 267 acres and conducted one timber sale. This sale consisted of a final harvest of the second-generation Piedmont orchard and a portion of the second-generation Coastal orchard for a total of 76 acres. Thirty-five acres of the second-generation Coastal orchard were also thinned.

FOREST PROTECTION

No wildfires occurred on NFC this fiscal year.

WILDLIFE MANAGEMENT

Fifteen acres of wildlife food plots were maintained with funding provided by the Quality Deer Management Association (QDMA), National Wild Turkey Federation (NWTf), and Lowcountry RC&D.

RARE, THREATENED AND ENDANGERED SPECIES MANAGEMENT

No rare, threatened, or endangered species are known to occur on Niederhof Forestry Center.

INFRASTRUCTURE

Personnel improved the road system at Niederhof and installed one new culvert on the property.

OUTREACH

Niederhof hunts FY21				
	Number of Hunt Participants	Others Attending	SCFC	Total
Deer Hunts (3 hunts)				
December Rack Pack	7	17	10	34
Oct. QDMA Military Appreciation	5	0	8	13
Nov QDMA Military Appreciation	6	1	9	16
Total	18	18	27	63
Turkey Hunts (1 hunt)				
March Military Appreciation NWTF	4	3	7	14
Coon Hunt (1 hunt)				
Youth Coon Hunt	7	7	3	17
Total: 5 Hunts	29	28	37	94

State forest revenue						
	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Gross Revenue	\$4,077,269	\$3,126,490	\$3,072,999	\$2,846,075	\$2,363,876	\$1,979,540
Operating Expenses	(\$2,053,605)	(\$1,905,164)	(\$1,813,109)	(\$1,996,717)	(\$2,084,033)	(\$1,848,539)
Payment to County Schools	(\$980,462)	(\$750,485)	(\$747,630)	(\$699,817)	(\$581,427)	(\$477,609)
Agency Funds Transfer		(\$837,065)			(\$53,385)	
Annual Carry Over	\$1,043,203	(\$366,224)	\$512,260	\$149,540	(\$354,970)	(\$346,608)
	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21
Gross Revenue	\$2,972,549	\$2,956,143	\$3,016,529	\$3,799,215	\$3,780,727	\$3,944,638*
Operating Expenses	(\$1,921,155)	(\$1,879,296)	(\$1,953,005)	(\$1,954,788)	(\$1,720,946)	(\$2,012,778)
Payment to County Schools	(\$734,796)	(\$731,757)	(\$743,762)	(\$939,931)	(\$917,677)	(\$952,187)
Agency Funds Transfer					\$575,698	
Annual Carry Over	\$316,599	\$345,090	\$319,762	\$904,496	\$1,142,104	\$979,662
Total Current Carry Over: \$4,916,399						

*includes \$11,252 of revenue associated with Good Neighbor Authority activities

State Lands Management Program

The State Lands Forest Management Program was created to provide professional forest management assistance to South Carolina state agencies that own timberlands, as well as to the U.S. Forest Service through the Good Neighbor Authority program. This assistance consisted of cruising, marking, management assistance, and administering timber sales. The agencies and facilities assisted during FY21 were as follows:

State lands forest management assistance		
Agency	Acres	Tons
DNR		
Belfast WMA	591	26,698
Love Farm WMA	72	
Santee Coastal Reserve	466	
Woodbury WMA	1,132	
PRT		
Colonial Dorchester State Historic Site	70	3,068
DNR/GNA		
King's Creek	578	
GNA – Francis Marion NF		
Burned Shed Tree Planting	92	
Dept. of Corrections		
Trenton Correctional Institute	25	
Totals	3,026	29,766

Other Activities

In addition, the five state forests (Manchester, Sand Hills, Wee Tee, Harbison, and Poe Creek) maintained dual certification under the Sustainable Forestry Initiative (SFI) and the American Forest Foundation (AFF) standards of sustainability.

The USDA Forest Service and the SCFC entered into a Good Neighbor Agreement in which the Forest Service contracts with the SCFC to have the agency perform / administer agreed upon forest management activities under the SCFC procedures. During FY21 a reforestation and timber sale administration project was conducted on the Francis Marion National Forest under this agreement.

The State Lands Coordinator:

- Serves as primary contact and coordinator for all state forest certification activities
- Adheres to applicable reporting and data management requirements
- Serves as the primary contact and coordinator for State Forest harvest scheduling, modeling, mapping, and inventory collection
- Serves on the State Trails Committee
- Serves on SC Sustainable Forestry Teachers Tour advisory committee
- Serves on the SFI State Implementation Committee (S.I.C.)
- Facilitates timber marking with regions where possible
- Serves as the agency G.N.A primary contact
- Serves as a forest management / timber sale resource for all other agencies as well as counties and municipalities as requested

RESOURCE DEVELOPMENT DIVISION

Business Development

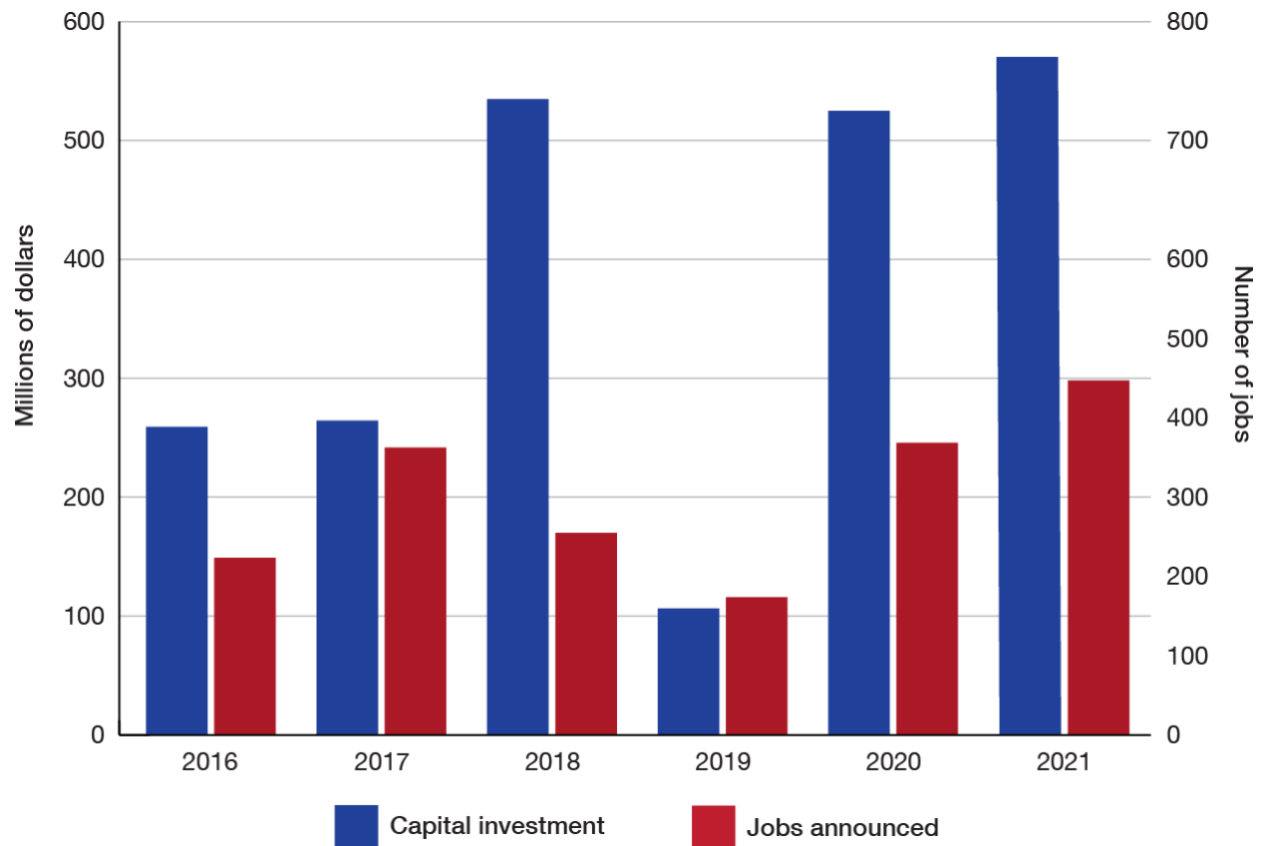
The goal of the Forestry Commission's Business Development Program is to enhance the contribution of South Carolina's forest resources and forest product-related businesses to the state's economy. We accomplish this goal by: 1) producing current forest resource information, 2) describing the health of the existing forest industry, 3) promoting South Carolina forest products to global markets, and 4) assisting as needed in the expansion of forest product manufacturing. The Business Development Group has three positions that work as a team, including a forest resource analyst, forest products marketing specialist, and industry recruitment lead.

The agency maintains directories of all primary and secondary forest product mills in South Carolina. Primary mills, such as sawmills, plywood plants or paper mills convert logs into commodity forest products such as lumber, panels and paper. Secondary plants produce value-added forest products like furniture, trusses and prefabricated structures. By the end of June 2021, there were 89 primary and 782 secondary forest product mills in South Carolina. Division personnel met with a sample of 38 primary mills as a part of the national Timber Products Output Program to estimate production levels in 2020. Early estimates indicate just under a 2% increase in production for solid wood products mills from 2019 to 2020.

The COVID-19 pandemic heavily impacted forest products marketing in its ability to conduct domestic and international programs. In September, the agency published the results of the LSR marketing project: "Procurement Decision Practices in the U.S. Construction Sector" to the participating agencies, interested faculty at Virginia Tech, and the general public. In October, the Forest Commission published a profile of the market for wood products in the EU and the UK. Also, in October, the agency participated in a podcast with the Tommy and Victoria Baker School of Business at the Citadel. The conversation was about the use of business data analytics in forest products exports. Early in 2021, the Forestry Commission began planning an inbound trade mission for South Carolina log exports yards and Indian timber buyers. The mission has been postponed due to COVID-19, but the work done served as the base to carry out a virtual trade mission later in the calendar year.

Finally, the agency cooperates with the SC Department of Commerce as well as regional and local economic developers to help grow the economic contribution of forestry to South Carolina's economy. During FY '21, there were 12 announcements totaling \$571.4 million in capital investments that resulted in 446 new jobs created by the forest products industry in South Carolina. Over 80% of the capital investment was for three of the 12 project, involving upgrades at two paper manufacturing facilities and a wood chemical company startup. The new industry announcements were evenly divided between manufacturing startups and expansion of existing projects with 6 of each.

Forest-based economic development impact



Nursery and Tree Improvement

The South Carolina Forestry Commission owns two Nursery and Tree Improvement (N&TI) facilities: Taylor Nursery in Edgefield County and Niederhof Forestry Center in Jasper County. The goal of the N&TI Program is to provide landowners with the highest-quality seed and seedlings available for timber production, wildlife habitat improvement, Christmas tree production, and restoration of valuable forested ecosystems. The agency actively operates Niederhof Forestry Center, but on April 2, 2018, ArborGen took over the management and operation of Taylor Nursery under a 10-year contract with the South Carolina Forestry Commission.

Taylor Nursery

Taylor Nursery, located one mile east of Trenton, SC in Edgefield County, produces bare-root and containerized seedlings for South Carolina landowners. Originally named Ridge Nursery when built in 1958, the facility was renamed Taylor Nursery in 1981 when the main office complex was rebuilt following a fire. The new name was in honor of A. Brandon Taylor Jr., an Upstate industrial leader in wood treatment, who served as a Commissioner from 1961-1982 and Commission Chairman from 1975-1981. The nursery property, including office complex, roads, & irrigation pond, consists of 345 acres. 106 acres are under irrigation and used for seedling production.

During FY2017-18, the agency put out a Request for Proposals (RFP) for the management and operation of Taylor Nursery. As a result of this RFP, on April 2, 2018, ArborGen was awarded a 10-year contract for oversight of Taylor Nursery. The South Carolina Forestry Commission has retained the right to have up to five million seedlings grown annually by ArborGen for South Carolina landowners at agency-approved pricing. For the 2020-2021 planting season, ArborGen was requested to produce and market 4,121,600 seedlings under the terms of the contract.

The SCFC conducts a nursery survey annually to determine the number of seedlings planted in South Carolina. During FY2020-21, 84,490,381 pines and 1,142,235 hardwood and other seedlings were planted in South Carolina for a total of 85,632,616 seedlings from all nursery sources. This number is 1.3% higher than the number of seedlings planted the previous year. Tree planting has been fairly stable recently with an average of 86.6 million seedlings being planted over the past three years.

ArborGen distributed 2,947,277 pines and 68,017 hardwood and other seedlings to Forestry Commission customers from Taylor Nursery in FY2020-21 for a total of 3,015,294 seedlings. The total amount distributed represents 73% of the total number of bareroot and containerized seedlings requested to be grown at Taylor Nursery for SCFC customers. The seedlings sold under the ArborGen contract amounted to 3.5% of the seedlings distributed in South Carolina from all public and private sources.

In past years, the SCFC has surveyed at least a 10% sample of seedling customers to determine general satisfaction with our seedlings and to target areas for improvement. This year the survey was e-mailed to all customers who supplied ArborGen with an e-mail address. Of the 440 surveys e-mailed out, 227 (52%) customers responded. The 2021 survey indicated that 89.7% of our customers were satisfied with Taylor Nursery's seedling quality and service. Of the 65 customers who had a problem with their seedling order, 75% of the customers were satisfied with Taylor Nursery's response. The courtesy and professionalism of Taylor Nursery employees earned the highest rating of this survey (96.0% satisfied). Of the 92 customer comments on returned survey forms, 42% of the comments were very complimentary of the nursery program. The main concern expressed involved poor seedling survival due to perceived seedling quality issues by 10 customers.

Niederhof Forestry Center

Niederhof Forestry Center (NFC) is located on a 1,593-acre tract of land that the SCFC purchased on December 1, 1983. Originally part of the Hoover Plantation, a 3,950-acre plantation north of Tillman, SC, Niederhof was acquired to establish second-generation seed orchards and to provide areas for future advanced-generation orchards. NFC was located in an area of the state that is well known for good seed production and minimal frost and ice damage. The facility was named for Cam Niederhof, a Westvaco executive, who served as a SCFC Commissioner for 24 years.

NFC is staffed by a full-time Seed Orchard Manager and a Tree Improvement Specialist with assistance as needed by Coastal Region staff. A Forestry Technician I is assigned to NFC as part of his work duties when scheduled on-call on normal workdays. Additional personnel from the Edisto Unit assist as needed with seed orchard establishment and management. NFC attempts to operate solely based upon revenues generated through cone/seed sales and funding from research agreements.

Second-generation loblolly pine orchards were established from 1985-1989, totaling 322 acres; 30 acres of 1.5-generation longleaf pine were established from 1988-1992. NFC's loblolly orchards came into production in 1993 with some 4,542 bushels collected from both Coastal and Piedmont province orchards and the longleaf orchard has been in production since 2008. To date, some 78,703.5 bushels have been collected. In 2004, as a result of budget cuts, a strategic change in goals for NFC resulted in the reduction of 2nd-generation orchards to 131.4 acres. It is worthy to note that during the years 1993-2005, NFC orchards consistently produced 25% of all second generation seed within the cooperative. In 2016, a 15 acre block of 2nd Generation Coastal loblolly pine orchard was harvested to provide some buffer area and expansion for 3rd Cycle Coastal loblolly pine seed orchard elite selections. Current 2nd Generation loblolly pine seed orchard acreage stands at 33.25 acres, which permits continuing interest in premier selections to be harvested for internal use and seed/cone sale revenue, while freeing up old orchard acreage for new orchard establishment in the coming years.

Third-cycle orchard establishment occurred between 2005-2011. These new orchards represent the culmination of over 40 years' breeding and testing work by our agency as part of the NCSU Cooperative Tree Improvement Program (NCSUCTIP) and will provide landowners in South Carolina with very high-quality genetically-improved seedlings that are specifically adapted to our state. There are 17.6 acres of coastal 3rd cycle loblolly pine orchard and 12.4 acres of piedmont 3rd cycle loblolly pine orchard. Initial rogueing was performed across 25% of the 3rd-Cycle Coastal loblolly pine seed orchard last year to remove poorer performing selections while opening up vital space for nutrient uptake and crown establishment of selections having greater genetic value.

Cone collection for 2020 yielded 714 bushels 2nd-Generation Coastal loblolly pine, 1,093.5 bushels 3rd-Cycle Coastal loblolly pine, 2,183 bushels 3rd-Cycle Piedmont loblolly pine and 495 bushels 1.5 generation longleaf pine. Of the 1,534.5 bushels of cones processed by the Forestry Commission, seed yields were as follows: 495 bushels of 1.5 Generation Longleaf pine cones yielded 234.70 pounds seed, 131.5 bushels of 3rd-Cycle Coastal loblolly selections yielded 100.20 pounds seed, and 908 bushels of 3rd-Cycle Piedmont loblolly selections yielded 1,213.7 pounds seed.

NFC's annual sale of seed and pine cones generated \$335,896.96 in revenue: since 1993, Niederhof Forestry Center's advanced generation seed orchards have created additional revenue in the amount of \$2,941,705.33 from green and empty cone sales, seed sales, and sale of pine pollen. The value of this revenue does not account for the value of pine seed delivered to Taylor Nursery for internal seedling production during our operation of the nursery.

In addition to the operational orchards, the Tree Improvement Program (TIP) is also located at NFC. As a full member of the North Carolina State University Cooperative Tree Improvement Program, the SCFC is responsible for 1/10th of the cooperative's workload. In order to guide the program, a 5-year plan was partially developed for progeny testing and other tree improvement activities. When completed, the plan will identify a prioritized list of progeny test sites for South Carolina. To date, the TIP has established a total of 5 active progeny tests in the Coastal (1) and Piedmont (4) regions. These tests were established (2), maintained (5) and measured (3) in a timely fashion during the year.

Source of seedlings distributed in South Carolina, FY2020-21				
Seedling Provider	Pines Distributed	Hardwoods & Others Distributed	Total Number of Trees Distributed	Percent of Grand Total
ArborGen (Blenheim & Taylor Nurseries in SC + others)	43,569,327	1,130,235	44,699,562	52.2%
International Forest Company (2 GA & 1 NC nursery)	20,640,054	0	20,640,054	24.1%
Weyerhaeuser (Quail Ridge)	15,500,000	0	15,500,000	18.1%
Bodenhamer Farms & Nursery	2,500,000	0	2,500,000	2.9%
Meeks Farm & Nursery	1,671,000	0	1,642,000	1.9%
Georgia Forestry Commission	605,000	12,000	617,000	0.7%
North Carolina Forest Service (Claridge Nursery)	5,000	0	5,000	<0.1%
Total	84,490,381	1,142,235	85,632,616	100%

Tree seedlings planted by landowner classification, FY2020-21

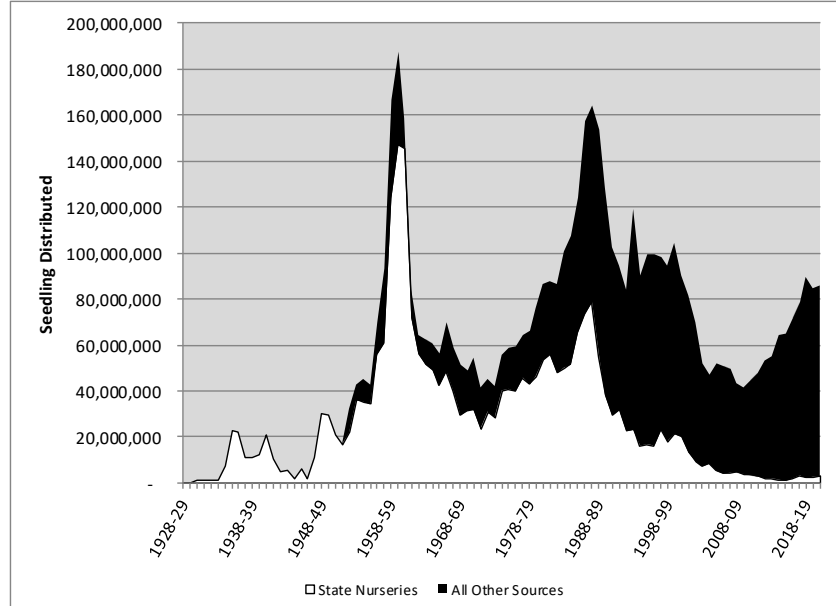
Land Ownership	Pines Planted	Hardwoods & Others Planted	Total Number of Trees Planted	Percent of Total
Private Forestlands	83,260,150	1,136,935	84,397,085	98.6%
Public Forestlands	1,230,231	5,300	1,235,531	1.4%
Total	84,490,381	1,142,235	85,632,616	100%

State nursery seedling production & sales, FY220-21

Species	Seedling Quotas	Seedlings Sold	% Sold
Baldcypress	11,150	11,150	100%
Carolina Sapphire CTR	1,200	352	29%
Cedar, Eastern Red	12,000	9,940	83%
Clemson Greenspire CTR	1,200	128	11%
Crabapple, Southern	4,000	3,160	79%
Dogwood	4,000	3,720	93%
Leyland Cypress CTR	5,000	256	5%
Loblolly Pine, OP Elite	1,500,000	639,255	43%
Loblolly Pine, OP Select	1,500,000	1,485,140	99%
Longleaf Pine Improved CTR	1,000,000	800,392	80%
Murray Cypress CTR	5,000	4,096	82%
Oak, Cherrybark	5,000	3,810	76%
Oak, Gobbler	3,000	2,730	91%
Oak, Live	3,000	2,780	93%
Oak, Northern Red	2,000	1,080	54%
Oak, Pin	2,000	930	46%
Oak, Sawtooth	6,000	3,140	52%
Oak, Shumard	2,000	1,470	74%
Oak, Swamp Chestnut	4,000	2,550	64%
Oak, White	3,000	1,785	60%
Oak, Willow	4,000	3,620	90%
Persimmon	4,000	3,630	91%
Redbud, Eastern	2,000	1,900	95%
Shortleaf Pine	10,000	2,830	28%
Sycamore	1,050	1,050	100%
Virginia Pine Christmas Tree Stock	12,000	11,810	98%
Walnut, Black	1,000	890	89%
White Pine	8,000	7,850	98%
Yellow Poplar	4,000	3,850	96%
Totals	4,121,600	3,015,294	73%

Seedling Distribution 1928-2021

Total State			Total State		
Year	Nurseries	Total All Sources	Year	Nurseries	Total All Sources
1928-29	142,000	142,000	1974-75	40,082,000	55,997,000
1929-30	148,000	148,000	1975-76	40,664,000	59,063,000
1930-31	986,000	986,000	1976-77	39,795,000	59,238,000
1931-32	976,000	976,000	1977-78	45,735,000	64,380,000
1932-33	996,000	996,000	1978-79	43,010,000	65,937,000
1933-34	1,031,000	1,031,000	1979-80	46,375,000	76,207,000
1934-35	7,529,000	7,529,000	1980-81	53,513,000	86,420,000
1935-36	23,000,000	23,000,000	1981-82	55,728,000	87,793,000
1936-37	22,000,000	22,000,000	1982-83	47,799,000	86,265,000
1937-38	11,192,000	11,192,000	1983-84	50,170,000	100,394,000
1938-39	10,854,000	10,854,000	1984-85	51,636,000	107,718,000
1939-40	12,244,000	12,244,000	1985-86	65,465,000	124,381,000
1940-41	21,165,000	21,165,000	1986-87	73,555,000	157,523,000
1941-42	10,275,000	10,275,000	1987-88	78,788,000	164,095,000
1942-43	4,742,000	4,742,000	1988-89	55,052,000	153,450,000
1943-44	5,663,000	5,663,000	1989-90	38,356,000	128,475,000
1944-45	1,963,000	1,963,000	1990-91	29,297,000	102,384,000
1945-46	6,402,000	6,402,000	1991-92	31,984,000	94,710,000
1946-47	1,963,000	1,963,000	1992-93	22,665,000	84,287,000
1947-48	11,357,000	11,357,000	1993-94	23,286,000	119,311,000
1948-49	30,389,000	30,339,000	1994-95	16,154,000	90,336,000
1949-50	29,502,000	29,502,000	1995-96	16,841,000	99,549,000
1950-51	20,615,000	20,615,000	1996-97	16,058,000	99,439,000
1951-52	16,619,000	16,619,000	1997-98	23,278,000	97,963,000
1952-53	22,036,000	32,246,000	1998-99	17,955,000	94,539,000
1953-54	36,210,000	42,852,000	1999-00	21,524,000	104,594,000
1954-55	35,373,000	45,182,000	2000-01	20,095,000	90,346,000
1955-56	34,414,000	42,932,000	2001-02	13,500,000	81,431,000
1956-57	55,754,000	69,659,000	2002-03	9,376,000	69,989,000
1957-58	60,846,000	93,369,000	2003-04	7,202,000	51,823,000
1958-59	123,985,000	166,351,000	2004-05	8,563,000	47,243,000
1959-60	147,146,000	187,516,000	2005-06	5,437,000	52,165,000
1960-61	145,609,000	158,331,000	2006-07	4,206,000	50,900,000
1961-62	71,892,000	83,844,000	2007-08	4,539,842	49,320,517
1962-63	56,191,000	64,202,000	2008-09	4,739,783	43,692,314
1963-64	51,446,000	62,424,000	2009-10	3,762,989	41,549,345
1964-65	49,010,000	60,683,000	2010-11	3,629,610	44,374,915
1965-66	42,311,000	56,529,000	2011-12	2,922,880	47,468,239
1966-67	48,575,000	69,598,000	2012-13	2,091,256	53,342,588
1967-68	39,970,000	58,812,000	2013-14	2,125,576	54,971,881
1968-69	29,529,000	51,453,000	2014-15	1,473,558	64,582,487
1969-70	31,415,000	49,203,000	2015-16	1,146,389	64,998,195
1970-71	31,940,000	54,541,000	2016-17	1,902,620	71,971,811
1971-72	23,678,000	41,357,000	2017-18	3,265,745	78,495,405
1972-73	30,978,000	45,239,000	2018-19	2,284,917	89,767,176
1973-74	28,443,000	42,306,000	2019-20	2,621,548	84,510,019
			2020-21	3,015,294	85,632,616
Total State Nurseries		2,601,120,007			
Total All Sources		5,713,354,508			



SCFC active seed orchards		
Orchard Type	Years Established	Acres
Creech Seed Orchard/Manchester State Forest		
Genetic Diversity Archives (Clone Banks)	1977-1983	25
Virginia Pine 1.0 (Creech)	1980	1
Virginia Pine 1.0 (Manchester)	1986	2
Sawtooth Oak 1.0 Seedling	1990	2
Total		30
Niederhof Seed Orchard		
Genetic Archives, 3rd Cycle	2008-2009	4.2
Coastal Loblolly Pine 2.0	1985-1988	33.2
Longleaf Pine 1.5	1988-1990	30
Loblolly Pine Breeding Orchard 3.0	1997-2003	7.2
Longleaf Pine Seedling Seed Orchard	1998	8
Coastal Loblolly Pine 3.0	2005-2011	16.1
Piedmont Loblolly Pine 3.0	2005-2011	12.4
Total		111.1
Total		
Piedmont Seed Orchard		
Virginia Pine 1.0	1993	3
Northern Red Oak Seedling Seed Orchard	1993-1995	2
Total		5
Grand Total		146.1

Forest Inventory & Analysis

The Forest Inventory and Analysis (FIA) program is a cooperative program with the US Forest Service – Southern Research Station (SRS) to collect forest inventory and forest health monitoring data from a network of permanent sample plots. Funding for the program is provided through a 75% federal grant and a 25% state match of the federal grant funds. There are 3,452 total forest inventory plots located in South Carolina. In addition, there are 224 intensification plots that are located on the Sumter and Francis Marion National Forests. Plots are sampled in 20% increments of the total, referred to as panels. Plots are measured for growth projections, mortality and harvest assessments, and land-use classification. In addition, FIA provides information about South Carolina's forest resources including forest acreage, timber quality, timber volume, timber growth, forage, water, and recreation. This network of plot data collection is referred to as the Phase 2 portion of FIA field data collection. The information provided by FIA Phase 2 allows the evaluation of both quantity and quality of these important resources. The U.S. Forest Service furnishes data analysis and reporting for this program.

Each year, during the summer growing season, a subset of the standard FIA plot grid is selected to collect forest health attributes. This part of the program is referred to as Phase 2+. Phase 2+ plots were set at one-sixteenth intensity of the standard FIA plot grid for the summer of 2020 and 2021. Phase 2+ plots include additional measurements that are collected to provide data on forest vegetative structure, down woody material, and tree crowns.

Currently, three full-time inventory crews, consisting of two employees each, are stationed throughout the state with field offices in Newberry, Florence, and Walterboro. An additional temporary position was added to aid in data collection production and is located in Columbia. The program coordinator is stationed in Columbia. All crewmembers are required to exceed a minimal accuracy average of 87% for all inventory plots. U.S. Forest Service personnel conduct quality assurance and quality control checks, on a sample of plots, to insure the accuracy of the data collected by Forestry Commission field crews. During FY 2020-21, the average accuracy for all crewmembers was 94.37% with each crewmember exceeding the 87% yearly average required by SRS.

During FY 2020-21, field crews completed one panel of plots that began in FY 2018-2019 and began the next subsequent panel which was completed at the end of FY 2020-2021. For the fiscal year, a total of 597 Phase 2 sample plots were completed by Forestry Commission crews with 40 Phase 2+ plots being a subset of these plots. SRS completed 267 plots, consisting 188 nonforest plots and 79 plots classified as census water. Nonforest and census water plots were identified in the SRS office and not sent to the Forestry Commission field crews. The FIA program completed data collection on the third and fourth panel of the Cycle 12 inventory and began the fifth panel of data collection. The FIA program has completed 21% of the fifth panel of the Cycle 12 inventory of data collection. The FIA program completed 16 product utilization studies on active logging operations across the state to develop factors for logging residues, logging damage, and utilization of the unmerchantable portion of harvested trees. In addition to the standard FIA plot grid, 42 FIA plots were collected on the Sumter and Francis Marion National Forests as intensification plots.

Of the 13 southern states, South Carolina was the first state to complete the 8th inventory (2001), the 9th inventory (2006), the 10th inventory (2011), and the 11th inventory (2017). Subsequently, South Carolina is the first state in the nation to initiate the 12th inventory. The SCFC FIA program

is slightly behind schedule to complete the 12th inventory measurements in five years due to program vacancies and employee lost time associated with the Covid-19 pandemic. The Cycle 12th inventory is expected to be completed before December 2022.

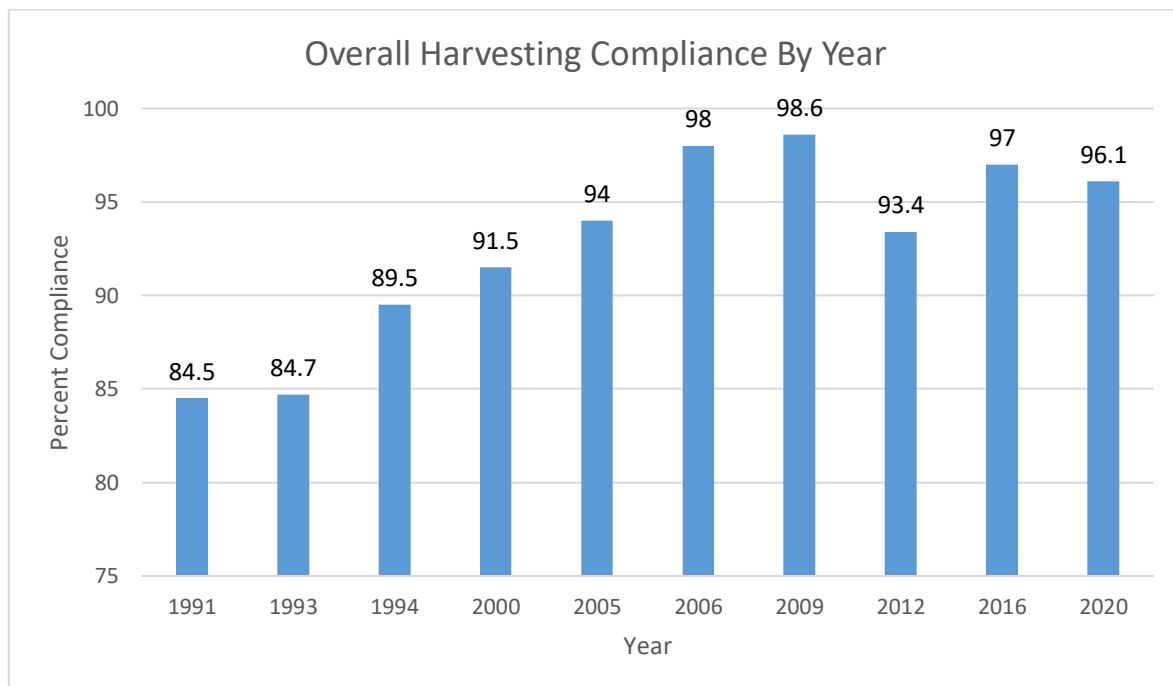
Environmental Management

The Environmental Management Section is responsible for the development and implementation of South Carolina Forestry Commission programs that are related to the environmental protection of forest and associated natural resources. Issues that are addressed include the protection of water quality, site productivity, endangered species and unique ecosystems.

BMP Compliance and Implementation Monitoring

BMP monitoring in South Carolina is conducted in accordance with the Southern Group of State Foresters Water Resource Committee's *Silviculture Best Management Practices Implementation Monitoring – A Framework for State Forestry Agencies* published in 1997 and revised in 2002. This ensures consistency among the thirteen states in the southeastern United States.

Sites for the 2019/2020 monitoring study were located in November 2019 using SouthFACT, a forest cover change detection tool developed by the North Carolina Forest Service. BMP compliance and implementation was evaluated on 179 tracts that had been harvested within the prior year. Overall BMP compliance for timber harvesting was found to be 96.1% which is a slight decrease from 97% compliance in 2016. The final monitoring report was printed and distributed in 2020.



BMP Education/Training Program

BMP training and education are essential to the success of the Forestry Commission's non-regulatory BMP program. During this fiscal year, 11 training programs were held across the state

reaching 98 loggers, landowners, contractors, forest resource professionals, and the general public. This number is significantly lower than normal due to COVID-19 restrictions.

Courtesy Exam Program

The S.C. Forestry Commission's BMP Foresters, located in each of the three operating regions of South Carolina, offer courtesy BMP exams to landowners, foresters, and timber buyers. The BMP Forester makes site-specific BMP recommendations to follow while conducting forestry activities. During this fiscal year, BMP Foresters provided assistance during 700 visits to 372 sites and completed 250 courtesy exams. The 250 sites reported combined for 16,457 acres of timberland harvested, including clearcuts and thinnings. Approximately 83.11 miles of perennial, intermittent, and ephemeral streams were evaluated during this grant period and 46.8 miles of forested Streamside Management Zones along perennial streams. BMP compliance on sites visited by a BMP Forester was 98.8%. BMP Foresters also conducted 18.2 hours of aerial observation for active forestry operations and responded to 36 complaints.

Metal Bridge Program

Historically, stream crossings have been the area with the lowest BMP compliance across the state. Stream crossings are critical for water quality protection since they often involve use of heavy equipment and soil disturbance near water bodies. Temporary bridges can significantly improve BMP compliance if installed and utilized correctly, however, they are cost prohibitive for many logging crews. This year, four metal section bridges were purchased by the Environmental Management Section to start a bridge loan program. These bridges will be housed at the Walterboro and Columbia Forestry Commission office and are available to any logging contractor that needs them.

Environmental Issues and Ecosystem Services

The Environmental Management Section monitored issues related to endangered species, wetlands, ecosystem services, EPA's proposed waters of the U.S. (WOTUS) rule and biomass harvesting. The Forestry Commission, through an MOA with the SC Rural Water Association and the Long Leaf Alliance, continued to promote source water protection in priority watersheds throughout South Carolina with a focus on the Lake Wateree, Lake Greenwood and the Savannah River watersheds. Work was focused on building a case and demonstrating that forestland is beneficial for water quality and may reduce water treatment costs. Emphasis was also placed on encouraging collaboration with forest landowners, residents, drinking water utilities and the industries that use these watersheds as a drinking water source.

The Environmental Management Section is also involved in several other initiatives and collaborations including but not limited to, the newly formed South Carolina Forests and Water Initiative, the Edisto River Basin Council and the Keeping Forests initiative. BMP Foresters are available to provide information and assistance to SCFC personnel, forestry professionals, and landowners. This assistance may include site visits, cooperation with other agencies, and assistance on state lands. BMP Foresters also provide forestry expertise to organizations and agencies addressing policy and regulation related to these issues.

Cooperation with Other Agencies

Programs related to environmental protection of forest resources require close cooperation with other agencies. The S.C. Forestry Commission has a Memorandum of Understanding with S.C. Department of Health and Environmental Control (DHEC) addressing cooperation on water quality issues. The Environmental Management Section serves as technical authority on silvicultural

activities, and cooperates with DHEC on evaluation and remediation of possible impacts. In March 2010 SCFC entered a Memorandum of Understanding with the US Army Corps of Engineers to better serve forest landowners and jointly address silvicultural issues in jurisdictional wetlands. BMP Foresters often work with DHEC and the U.S. Army Corps of Engineers when those agencies have regulatory authority over issues which may affect forestry operations, such as wetlands and navigable waterways. BMP Foresters also provide assistance with planning and implementation of Best Management Practices on public lands managed by other agencies.

COMMUNICATIONS & PUBLIC INFORMATION

The Communication & Public Information (CPI) Division plans and implements communication strategies and long-range public information, marketing, and educational programs for the South Carolina Forestry Commission. These activities are designed to enhance the agency's and forestry's image while promoting the agency's mission and goals. Playing the lead role in communication and public information for the agency, CPI staff coordinate media interest in and public relations for the agency; prepare appropriate responses to media requests; coordinate FOIA requests/responses; prepare news releases, articles, scripts, speeches, letters and reports; support agency departments, programs and personnel with forestry-related promotional items and information; and design original publications, fact sheets and other collateral material for agency personnel, programs and departments.

Public Relations & Information

Information services

MEDIA RELEASES

The Communications & Public Information Division wrote and distributed 12 press releases and/or media advisories on a wide range of topics, including fire danger announcements, three of which were Red Flag Fire Alerts, law enforcement arrests, SC Outstanding Educator of the Year Award winner Dodie Clark, announcements of partnerships with the SC Department of Parks, Recreation & Tourism (SCPRT) that resulted in numerous prescribed burns on multiple state parks, the agency's Junior Forester program, State Forests Checkoff Fund, BMP compliance, payments to county school districts, SC/National Forest Products Week, Wood Magic dates and media/VIP days, and seedling sales and availability.

PRESCRIBED FIRE AWARENESS MONTH

March was Prescribed Fire Awareness Month, and Forestry Commission employees answered the call to help raise awareness of the practice by inviting media to their burns. From the mountains to the coast, ample coverage of prescribed burns could be found in newspapers and on radio and television, thanks in large part to ambitious foresters, fire management officers and other agency personnel who took the time and went to great effort to coordinate their schedules with reporters. More than 25 stories from newspaper and broadcast media highlighted various prescribed burns around the state, 11 of which were TV packages that resulted from the agency's campaign to promote prescribed burning.

SOCIAL MEDIA

The Forestry Commission's Facebook page has 22,280 followers, including 1,206 new followers, and the agency's Twitter account has 2,041 followers, including 79 new followers. CPI staff published 310 posts on Facebook and 213 posts on Twitter, exceeding the target of one social media message/post each business day promoting the agency, forestry and industry news, events and people.

FREEDOM OF INFORMATION ACT REQUESTS

The Director of Communications & Public Information responded to, gathered agency information and data related to (with the assistance of various division directors and program managers) and resolved six FOIA requests.

Creative services

CPI staff re-ran its 13 radio and TV public service announcements on most stations across the state from March to June as part of the agency's participation in the South Carolina Broadcasters Association Public Education Program (PEP). Voiced by retired Urban Forestry Coordinator Lowe Sharpe and Piedmont Region BMP Forester Holly Welch, the commercials range in topics from the agency's multifaceted mission and our wildfire suppression responsibilities to forest management assistance for landowners as well as the overall economic impact of forestry in the state. In addition to airing on 110 radio stations and 37 TV outlets for three months, the spots were used as recruitment tools at career fairs and other expositions.

Publications

The Communications & Public Information Division produced a variety of publications for nearly every department and purpose this fiscal year. In addition to the ad hoc and periodic publications the division produces, which include monthly installments of the *Tree Country* employee newsletter, quarterly installments of the *Best of Tree Country* external newsletter, and annual updates of the agency's Seedling Price Guide, Project Learning Tree annual report and Wood Magic Forest Fair annual report, CPI staff completed the following:

- FY2020-21 Services brochure
- FY2020-21 FRP/SPB cost-share brochure
- FY2020-21 By The Numbers agency fact sheet
- Sand Hills State Forest brochure (updates to previous publication)
- Careers brochure (updates to previous publication)
- Forest Health manual update
- Agency overview/legislative budget request publication for County Board meetings

Other highlights

- Won the South Carolina State Library's 2020 Notable State Documents Award for the fifth time in six years with the publication of "Invasive Species of South Carolina," a guide to some of the most common and problematic invasive species encountered in our state's forests. The 168-page, perfect-bound book features a multiple-die-cut cover that allows readers to peer imaginatively through the bark of an ash tree to view the damage inside caused by a very destructive beetle pest, the Emerald Ash Borer.
- Designed and produced all of the tree menus and most of the other collateral printed items for a series of three Bradford Pear Bounty events held in conjunction with Clemson University, the City of Clemson and the City of Sumter.
- Completed the Environmental Education Center redesign project, with the installation of a touch-screen TV that allows users to select from a series of videos produced by CPI about forestry, wildfire and other topics.
- Sold 96 "Forest Trees of South Carolina" Tree ID books, collecting \$1,610 in revenue.

- Partnered with Palmetto Pride to produce several dozen aluminum anti-litter signs to be placed on four of the state forests (excluding Wee Tee).
- Participated in the SC Floodwater Commission's PowerPlantSC project, which aimed to have SC school children across the state plant 3 million loblolly pine seeds. While the event was ultimately postponed until the next fiscal year because of COVID-related concerns, the Director of Communications & Public Information helped plan, provide messaging for and create most of the collaterals for the statewide effort, including fact sheets, website and the organization's social media presence.
- Conceived the plan for, procure items for and implement the agency's distribution of employee appreciation items, which included employees having their choice from among three different options.
- Worked with executive staff to establish a set of COVID-19 protocols under which the agency could reasonably and safely host the agency's signature environmental education events such as Wood Magic. Maintained a special section on the agency website as a repository of general information and agency policies about COVID-19 and related messaging, including a standalone publication addressing return-to-work safety guidelines, about social distancing, operating procedures and other protocols during the pandemic. Additionally, CPI created numerous signs and flyers for various office facilities around the state related to COVID-19 safety protocols.
- Created ID placards for the various plant species in the headquarters' certified wildlife habitat.
- Exhibited at Forestry Association of South Carolina (FASC) annual meeting.
- Secured a proclamation from the governor designating the third week in October SC Forest Products Week, a campaign that was supported with promotion to statewide media.
- Secured a proclamation from the governor designating the month of March as Prescribed Fire Awareness Month. Worked with SCFC Protection Chief and SC Prescribed Fire Council to promote March as Prescribed Fire Awareness Month by distributing a press release to media and coordinating media visits to prescribed fire sites in their areas.
- Updated list of local/rural/volunteer fire departments for the Red Flag Fire Alert system.

Environmental Education

SCFC Environmental Education staff wrote and led new live virtual programs for grades kindergarten through 7th grade that teach children about forest resources and also meet the SC Department of Education academic standards. Students across the state who are unable to attend an in-person field trip to Harbison State Environmental Education Forest can now take advantage of these free programs.

SCFC Communication and Environmental Education staff produced an on-demand virtual field trip to Harbison State Forest. Designed for the 3rd-5th grade, the 30-minute video teaches students about forest organisms, the flow of energy through ecosystems, forest management, plant and animal adaptations for survival, and the conservation of natural resources. Students stay engaged through questioning prompts at various points throughout the field trip and complete an accompanying worksheet that can be used as an assessment piece by the teachers.

Environmental Education Highlights

- Facilitated 24 Project Learning Tree professional development events or presentations/exhibits.
- Conducted 50 education programs for a total of 34.5 contact hours, reaching 2,148 people in one high school, six middle schools and 42 elementary schools (not including the Wood Magic Forest Fair event, Project Learning Tree participants or Teachers Tour participants). Of those participants, 127 were adults.

- Developed a virtual model for Project Learning Tree facilitator professional development events.
- Partnered with other conservation organizations (National Parks, SC Department of Natural Resources, SC State Parks, and the SC Association of Conservation Districts) to create a video for the “Healthy Forests = Healthy Communities” initiative to be used for outreach and education.
- Partnered with the Cola City Homeschoolers to adopt the Harbison State Forest wildlife habitat garden through the SC Green Steps Schools program and planted 135 native plants.
- Recorded a promotional video with SCFC Communications staff for National Public Lands Day.
- Created new programs for homeschool organizations and summer camps visiting Harbison State Forest.

Project Learning Tree

In FY2020-2021, 27 professional development (PD) events reached 439 educators.

Project Learning Tree professional development events				
Workshop Type	# of PD events	% of PD events	# Of Participants	% Of Total Participants
Early Childhood	4	15	80	18
Pre-service Early Childhood	3	11	41	9
PreK-8	3	11	51	12
Pre-service PreK-8	12	45	161	37
Online Total	N/A	N/A	21	5
K-2, 3-5, & 6-8 E-Units	2	7	24	5
Secondary Modules	1	4	25	6
Facilitator Training and Refresher	2	7	36	8
TOTALS	27	100	439	100

Teachers’ Tour

The 2021 South Carolina Teacher’s Tour was held for 5 days in June with 50 applicants, 24 accepted applicants, and 21 participants completed the Tour. Selection for participation was focused on the target audience of full-time certified K-12 teachers with an interest in environmental studies, life sciences, biology, tech-prep, and/or natural resource education. The Tour was 5-days and included 60 SC Department of Education renewal credits or 3.0 nondegree graduate credits through the College of Charleston. Participants had to complete online pre-Tour coursework about forestry and Project Learning Tree. SCFC employees and forestry partners made the tour possible by being speakers, handling logistics, and conducting demonstrations.

Wood Magic Forest Fair

The 2020 Wood Magic Forest Fair was planned for 3 locations but was canceled due to the COVID-19 pandemic.

TECHNOLOGY DIVISION

This Division comprises the Information Technology Section, Geographic Information Systems (GIS) Section, and Communications Section.

Information Technology

The Information Technology Section is responsible for the maintenance, support, and security of the agency's local and wide area networks; twelve Windows servers; network storage devices; computers; laptops, tablets; software applications; and implementation of various initiatives to support agency operations and programs.

Major accomplishments this fiscal year were the replacement of seventeen laptops, three desktops, four regional NAS storage arrays, and six iPads that were at the end of their useful life.

Work associated with the State's mandates for implementation of policies, procedures, roles and responsibilities associated with information security and data privacy continued throughout the year. Thirteen (13) information security policies have been implemented by the agency as required by a Budget Proviso. Agency employees are required to complete the SCEIS online cybersecurity awareness training each year to maintain awareness. The Technology Division sent periodic reminder emails and warnings of current cybersecurity threats especially telephone and text message scams and ransomware imbedded in emails and websites.

GIS

The GIS Section provides support for all agency GIS needs. Hardware and software were upgraded this fiscal year along with supporting software used in day-to-day operations. Additional ArcGIS Desktop licenses and ArcGIS online accounts were created to extend mapping capabilities to additional field users. With assistant from the GIS Coordinating Council, the agency is receiving updated parcel, ownership and 911 address and road data for all counties in the state. The GIS Section merged individual county data into administrative area layers in the agency's GIS Server and in formats to be utilized in other GIS applications.

Ongoing maintenance and data updates were performed for ArcGIS online applications: Current Wildfire Activity Dashboard, Current Prescribed Burn Activity Dashboard, Wildfire Occurrence and Hotspot, and the WUI Treatment Status app. The GIS section created a Forest Stewardship Storymap and Region web application which is open to the public to allow for a statewide search to see if properties/parcels qualify for Forest Stewardship assistance. There was also a Survey123 BMP Exam form and reporting tool developed for use with BMP personnel mobile devices.

Models, map development, and documentation completed for the 2020 Forest Action Plan and the 2020 Forest Stewardship Priority Area. QA/QC of Statewide Imagery acquisition completed; 2019 NAIP imagery downloaded and statewide RGB and Infrared mosaics created; updated parcel, roads, and address point data obtained for the entire state; LiDAR data downloaded and DEMs/Hillshades created for the SC state forests.

Communications

The Communications Section maintains approximately five-hundred fifty-five mobile radios, seven base stations, twenty-nine control stations, twenty-nine repeaters, three-hundred portable radios, and

nineteen communications consoles and related systems at the three regional dispatch centers and Columbia Headquarters.

Agency VHF radios are being upgraded to a multi-channel higher powered radios that can operate on the public safety standard digital mode. In addition to being a current production model, it is compatible with other state and federal wildfire agencies. Selection of a portable radio to replace our 15-year-old model is underway. Expect completion by 2022 2nd quarter.

Starting in fiscal year 19-20 agency cell phones were replaced with Smartphones which enabled enhanced communications and advanced apps (burning and wildfire info, mapping, GPS, weather, etc.). This year we are continuing the transition to FirstNet, the public safety broadband network to provide a more resilient connection.

Agency unit offices have more reliable, faster internet connectivity using FirstNet connected routers at these offices. We are also using this technology as backup to some repeater control stations around the state.

Continued interest in the FirstNet Mission Critical Push-to-Talk (MCPTT) to interface with the agency's existing VHF land mobile radio system, with wireless backup links with the agency's 3 dispatch centers and the Columbia headquarters.

ADMINISTRATION DIVISION

Financial statement, FY 2020-21			
Carry Forward - July 1, 2020			\$10,903,538
Revenues			
State Appropriations	\$22,004,592	Reimbursement of PY Disaster Expenditures - Retention	\$30,778
Federal Grants	\$3,409,645	Rent - Residence	\$16,400
Earmarked Funds	- -	Rent - Farm Land	\$49,154
Hunting & Fishing License	\$337,107	Rent - State Owned Property	\$98,139
Refund of Prior Year Expenditure	\$47,647	Rent - Equipment	\$5,965
Burning Assistance Fee	\$227,821	Contribution & Donations	\$34,813
Fire Lane Fee	\$142,885	Insurance Claims	\$14,397
Timber Marking Fee		Sale of Services	\$219,735
Training Conference - Registration Fee	\$2,450	Sale of Publications & Brochures	\$3,300
User Fee - State Park & Forest	\$105,760	Sale of Recycling Material	\$839
Forest Product Assessment	\$850,108	Sale of Vehicles (Capitalized)	\$556,992
Construction of Water Bar	\$14,762	Sale of Machinery and Equipment (Capitalized)	\$97,240
Stand By for Prescribed Burning	\$3,240	Sale of Buildings (Non-Capitalized)	
Sale of Seedlings	\$315,686	Sale of Land (Capitalized)	
Sale of Timber	\$3,432,782	Sale of Other Assets	\$911
Conviction Surcharge	\$10,302	State Operating Grants - Restricted	\$-931
Other Penalties, Cost & Settlements	\$1,064	Insurance Premium Taxes - Firefighting Equipment	\$2,023,729
SCANA & Santee Cooper Settlement	\$6,843	Capital Reserve Funds - Firefighting Equipment	
Total Earmarked			\$8,651,202
Total Revenue			\$34,065,439
Expenditures			
State	\$22,001,526		
Federal	\$3,503,950		
Other	\$6,867,532		
Total Expenditures			\$32,373,008
Balance as of June 30, 2021			\$12,595,969



South Carolina Forestry Commission

Organizational Chart

